Relationship

BETWEEN

PNEUMONIA INCIDENCE AND CLIMATE IN INDIA.

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IN recent papers I have shown a close relationship between leprosy incidence and rainfall in India,[1] and between pulmonary tuberculosis and humidity and rain-bearing winds[2]; in the present communication I propose to deal with pneumonia on similar lines. Over a decade ago[3 4] I pointed out that phthisis and primary pneumonia in Calcutta were each responsible for about one-sixth of the total deaths in the Calcutta Medical College Hospital, as shown by an analysis of several thousand post-mortems, each causing a much higher mortality than any of the so-called tropical diseases; in my recent Finlayson lectures[5] I pointed out that the Calcutta vital statistics showed a still higher mortality from these two lung diseases, so their importance in India can scarcely be exaggerated. Moreover, my 20 years' post-mortem experience in Calcutta revealed that, except during a few months of the recent influenza pandemic, broncho-pneumonia was very rare, and the greatly predominating lobar form was essentially a disease of the prime of life, 70 per cent. having occurred between the ages of 21 and 40, and 97·3 per cent. between 11 and 60; so it may safely be assumed that among the jail population of over one and a half millions, with which I shall be dealing in this paper, among whom there are no children and few old people, a very great majority of the pneumonia cases were of the lobar form; for the 15 years' data from 1896 to 1910, from which the incidence shown in Fig. 1 are taken, are after the influenza epidemic of the early 'nineties and before the recent pandemic, over one-seventh of the total jail mortality during the period under review having been due to pneumonia, or about equal to the phthisis death-rate, and only exceeded by that from dysenteries. As the jail populations are under I.M.S. officers and post-mortems are made on fatal cases, they afford ideal data for studying the true incidence of pneumonia and other diseases in different parts of India.

INCIDENCE OF PNEUMONIA IN INDIA.

It has long been known that pneumonia is very prevalent, occasionally almost in epidemic form, in the North-West part of India, which has a much drier climate than the rest of India, while the extreme variations in rainfall, temperature, and degree of humidity in different areas of this vast country constitute India an ideal country for studying the influence of climate on disease incidence; for the annual reports of the Sanitary Commissioner with the Government of India record the rates per mille for a number of divisions, which were originally selected many years ago, through consultation between the medical and meteorological authorities, as representative of the varying climatic conditions of India. As the rates per mille for pneumonia are usually very similar year by year in the same area, the average figures I have worked out from 15 consecutive years may safely be relied on as sufficient for comparative purposes, and the figures are given in the accompanying table and also entered in Fig. 1, which is shaded according to the scale shown in it, from which it will be seen that the distribution of the high, intermediate, and low rates are very clear-cut; and the difference between the lowest and highest rate is more than a ten-fold one; presenting a striking picture, lending itself admirably for comparison with the meteorological data for the various parts of the country.

A brief description of the incidence of the disease will suffice, the numbers in brackets after the name of an area representing its number in Fig. 1. The highest rate of just over 50 per mille is found in the Lower Indus Valley, or Sinde (7b) in the North-West of India; the adjacent North Indus Valley (7a) and Gujerat (8a) areas show the next highest rates of over 25 per mille; these three areas are shaded uniformly dark in the map, while Baluchistan still further west has the highest pneumonia rate in the Indian Army, but is left unshaded as no jail figures are available for it. The next highest rates of 20 to 25 per mille are found in the two divisions immediately to the east of the areas of highest incidence just dealt with—namely, the Upper Sub-Himalayan (6) and Central India (8b), shaded with crossed lines; to the east and south of which there is a remarkable drop to below 15 per mille, or approximately the average rate for all India of 13·3 per mille, no intermediate figures of 15 to 20 being found, thus marking off the north-west area of exceptionally high incidence very clearly.

The areas of average incidence, 10 to 15 per mille, are shaded with single horizontal lines, and include the Central Provinces (9a), the Gangetic Plain and Chota Nagpur (5), Bengal and Orissa (4) and North-East Madras (11c) forming a solid block of the North-East of India proper, with the exception of Assam and Upper Burma. The remaining divisions still further south and east show rates below the normal, including Assam (3), the Deccan and Berar (9b), the Western Coast (10), and Central Madras (11a) with rates between 7·5 and 10 per mille; and the extreme south-east divisions of Burma Coast (1), Burma Inland (2), and South-East Madras (11b) with the very low rates of under 7·5 per mille; a steady decline from the north-west to the south-east being thus clearly evident, which must have some definite cause.

SEASONAL DISTRIBUTION OF PNEUMONIA.

We next require to know the incidence of pneumonia in the three very definite seasons of the year; the four dry cold months of November to February, the four hot dry months from March to June, during the last week or two of which the monsoon begins to spread over India, and the four wet equable months of July to October, during the last of which the monsoon gradually withdraws from Northern and Central India, and the comparatively feeble north-east monsoon becomes established over the south-east portions of the peninsula (11a and 11b). The table

Table Showing Seasonal Incidence and Yearly Rates Per Mille of Jail Pneumonia.

Division.	Cold season Nov.–Feb.	Hot season March–June.	Rainy season July–Oct.	Yearly rate.	Case-mortality.
	Per cent.	Per cent.	Per cent.	Per mille.	Per cent.
1. Burma Coast	35	37	28	4·2	39
2. Burma Inland	36	42	22	6·4	29
3. Assam Valleys	22	42	36	7·6	36
4. Bengal and Orissa ..	42	33	25	13·4	28·5
5. Gangetic Plain and Chota Nagpur ..	43	33	24	12·1	23
6. Upper Sub-Himalayan ..	53	29	18	22·0	23
7a. Indus Valley North	51	31	18	25·8	26
7b. Indus Valley South	60	25	15	50·2	
8a. Gujerat	43	36	21	25·5	23
8b. Central India				22·2	
9a. Central Provinces ..	40	30	30	12·1	25·5
9b. Deccan and Berar ..	45	34	21	9·2	
10. Western Coast	31	41	28	8·1	30
11a. Central Madras ..	31	35	34	8·2	24
11b. S.E. Madras	43	29	28	5·8	
11c. N.E. Madras	33	32	35	14·6	
All India	45	31	24	13·3	26

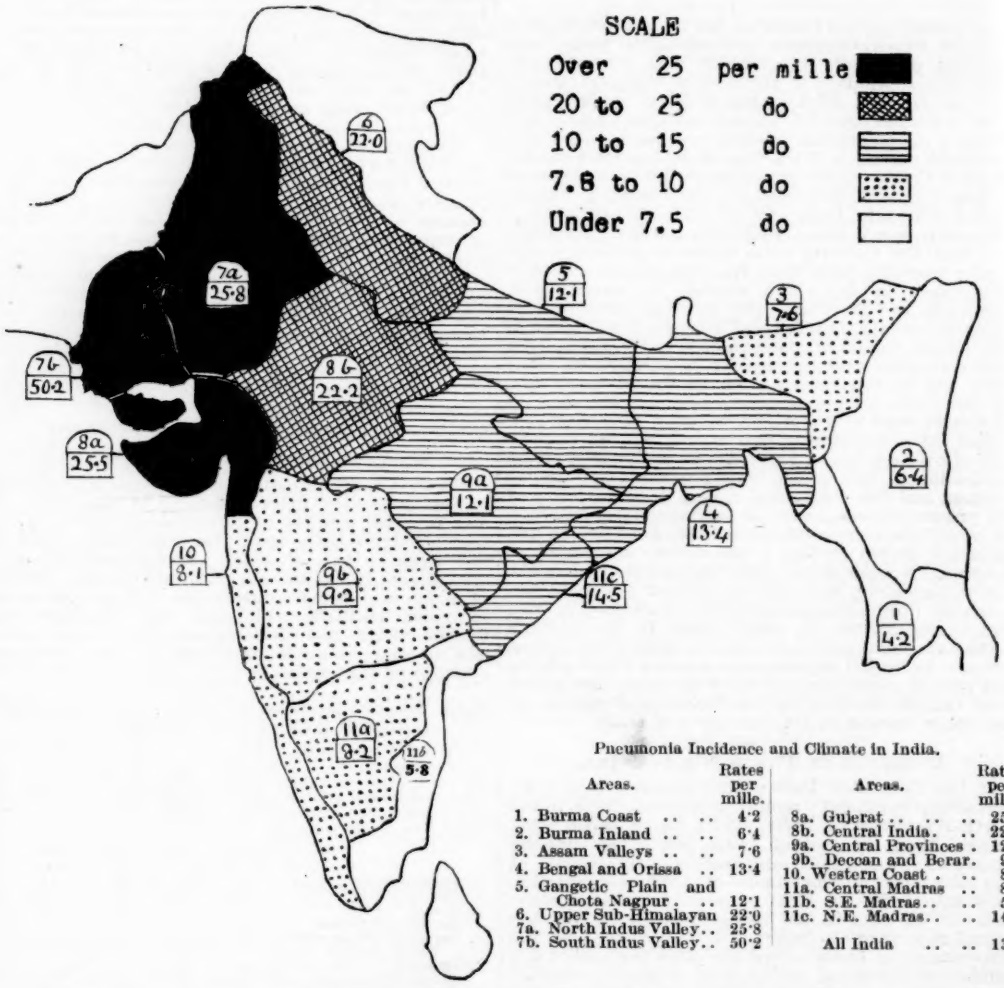
gives the percentages of the total 14,266 cases of each of these equal periods of time for every division, which would give an average of 33·3 per cent. for each season; the figures bring out the following interesting points. The total cases show the highest incidence of

45 per cent. in the four dry cold weather months, an approximately average incidence of 31 per cent. in the hot dry season with wide diurnal variations of temperature, especially during the occasional rain storms, and the low rate of 24 per cent. in the four warm equable rainy months. Turning to the figures for the different divisions, we find the cold weather incidence much below that of all India in just those areas in which the annual rate per mille is lowest—Burma, Assam, and Southern India; the percentages are about the average in Bengal, the Gangetic Valley, and the average monthly rates for the whole of India, and up to 100 per cent. excess in the high incidence north-west divisions.

CLIMATOLOGICAL CONDITIONS INFLUENCING PNEUMONIA DISTRIBUTION.

Rainfall.—Fig. 2 shows the distribution in inches of the annual rainfall of India, from which it at once appears that the high pneumonia north-west area has the most scanty rainfall, but as the monsoon period shows a very low proportion of pneumonia in

FIG. 1.



Pneumonia Incidence and Climate in India.

Areas.	Rates per mille.	Areas.	Rates per mille.
1. Burma Coast	4·2	8a. Gujerat	25·5
2. Burma Inland	6·4	8b. Central India. ..	22·2
3. Assam Valleys	7·6	9a. Central Provinces .	12·1
4. Bengal and Orissa ..	13·4	9b. Deccan and Berar.	9·2
5. Gangetic Plain and Chota Nagpur . ..	12·1	10. Western Coast . ..	8·1
6. Upper Sub-Himalayan	22·0	11a. Central Madras ..	8·2
7a. North Indus Valley..	25·8	11b. S.E. Madras.. ..	5·8
7b. South Indus Valley..	50·2	11c. N.E. Madras.. ..	14·6
		All India	13·3

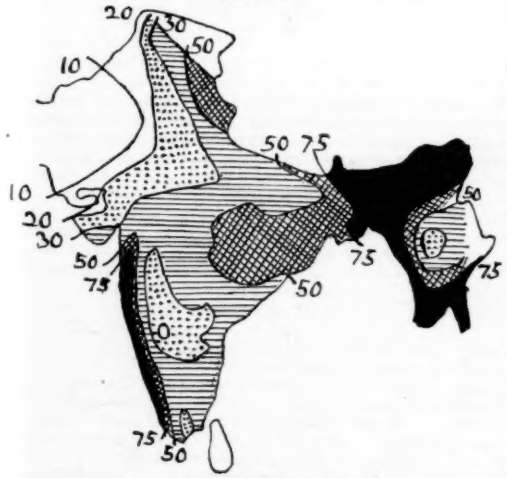
Central Provinces, with average annual pneumonia rates; but the cold weather percentages are in excess in the Upper Sub-Himalayan and Indus Valley divisions, where the highest pneumonia rates occur, the greatest proportion of 60 per cent., or nearly double the average, being met with in the South Indus Valley with by far the highest pneumonia incidence. It is therefore evident that we must look to the cold weather climatological conditions to furnish the clue to the excessive prevalence of pneumonia in North-West India and examine them in the two coldest months of the year, December and January, with the highest number of pneumonia cases, when they show 50 per cent. excess of the these divisions, the actual amount of rain does not appear to have much direct effect on the incidence of the disease.

Humidity.—The same high pneumonic area also has the lowest absolute humidity, as compared with other divisions, of 0·800 in the rainy season, as was illustrated in Map 1 of my recent paper on Tuberculosis Incidence and Climate in India,[2] but the study of this factor during the maximal pneumonia cold weather is of far greater importance, and consequently Fig. 3 shows the January absolute humidity, as measured by the mean daily aqueous vapour pressure, when the lowest readings of 0·300 and less are limited to precisely the north-west

area of high pneumonic incidence of over 20 per mille, the lowest rate in India at any season of the year of 0·250 and under, indicating an excessively dry climate, being met with in the extreme north-west in the divisions with over 25 per mille of pneumonia. Moreover, the cold weather humidity steadily increases with the decrease in the pneumonic rate as we proceed east and south, to reach its highest readings in the areas of lowest pneumonia incidence in South-East Madras and Lower Burma; so the cold weather humidity appears to be an important factor to be considered in any explanation of the incidence of pneumonia in India, for the hot weather annual humidity in India shows a very similar relative distribution to the above described cold weather readings, that is during the seasons when over 75 per cent. of the pneumonia cases occur, and differs but slightly in the monsoon months of minimum pneumonia prevalence.

Cold Weather Minimum Temperatures.—I now turn to the temperature conditions during the maximal pneumonia cold season, which are illustrated in Figs. 4. and 5. Firstly, Fig. 5 illustrates the absolute minimum temperatures in January, with the lowest readings and slightly the highest number of cases of pneumonia, while the temperature distribution in December is almost exactly similar. Once more it is quite clear that all the highest pneumonia rates occur in the coldest north-west divisions, with a minimum temperature of 35° F. or less, while the rates steadily diminish as we pass west and south into warmer areas; nearly all the average pneumonia rates are found in areas with minimum temperatures down to 45°, and the lowest incidence is in South-East Madras and Lower Burma with minimum temperatures of 50° and over. It is therefore clear that low minimum cold weather temperatures favour the prevalence of pneumonia in India and vice versa.

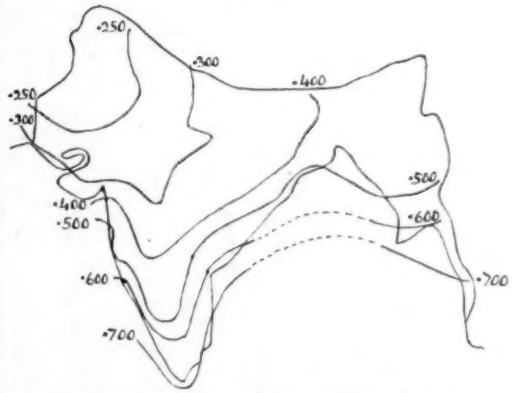
FIG. 2.



Rainfall in inches.

Diurnal Variations in the Winter Temperatures.—Fig. 4 also illustrates the still more important factor of the diurnal variations in the temperature in the month of December, when a great rise in the pneumonia cases takes place and the highest monthly number is recorded in the areas of high incidence, the cause of which I desire to elucidate; January has a closely similar temperature and pneumonia distribution. Once more a glance at the maps shows a most remarkable coincidence between the north-west areas with the highest diurnal variations of temperature of 30° and upwards in the cold season, and of the greatest pneumonia incidence; the next highest diurnal temperature variation of 25° and over covers nearly all the other divisions with about the average pneumonia incidence. On the contrary, the areas of rather low pneumonia have moderate diurnal variations of temperature, and the very low pneumonia areas of South-East Madras and Lower Burma are precisely those with the least diurnal variations of temperature in the cold months and also in the hot weather season. More-

FIG. 3.



Absolute humidity or mean aqueous vapour pressure in January.

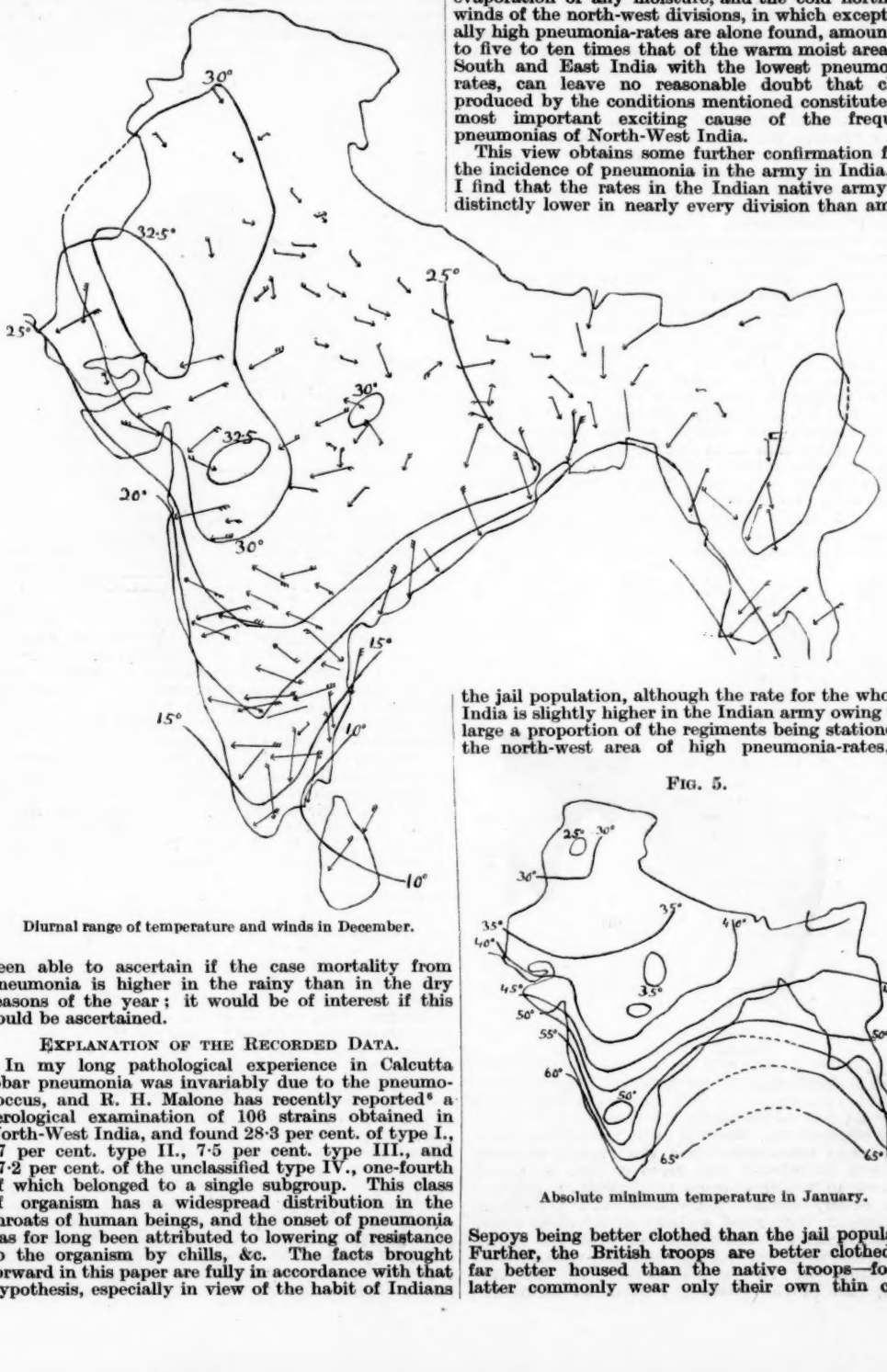
over, in the rainy season of minimal pneumonia rates in all India the diurnal variations in India are much less than at any other time of the year, very rarely exceeding 20° during the monsoon months except in the extreme North-West of India, which the rains scarcely affect. We may therefore conclude that a great diurnal variation of temperature, combined with a low minimum in the cold season, together with a very low degree of humidity, constitute the principal climatological conditions associated with an excessive incidence of pneumonia; precisely the opposite conditions hold with regard to the lowest prevalence, and intermediate readings coincide with moderate occurrence of the disease.

Direction of the Winds.—One other influencing factor is also illustrated in Fig. 4, in which the arrows represent the direction of the winds in the same month, December, their length being in proportion to the constancy, and the number of the feathers increase with their strength, the data in this and the other maps being taken from the Government Climatological Atlas of India, based on 20 years records. It will be observed that throughout the north of India the winter winds blow for the most part from the north to the south, south-east, or south-west; in the southern part of the peninsula, on the contrary, they mainly blow from the east from over the warm Bay of Bengal, and it is noteworthy that the cold north winds extend down only as far as the north-east portion of Madras (11c), exactly as far as an averagely high pneumonia-rate is found; south of this a very low incidence occurs with mainly warm east winds. Cold north winds, therefore, appear to be a further factor favouring high pneumonia-rates.

Variations in Case Mortality.—In the last column of the table I have entered the case mortalities of the main areas, which bring out an interesting point; for all the high percentages of deaths occur among the cases of the warm humid divisions with a low incidence of pneumonia; 39 per cent. in the Burma coast area (1), 36 per cent. in Assam (3), 30 per cent. on the west coast (10), 29 per cent. in Burma Island (2), which is less humid than the others just mentioned, and 28·5 per cent. in Bengal and Orissa (4). On the contrary, the very dry cold areas, with high pneumonic incidence, have low or average case mortalities, so it

would appear that a dry climate is favourable and a humid one unfavourable to the progress of the disease. Unfortunately, only the monthly numbers of cases are recorded and not the death-rates, so I have not been able to ascertain if the case mortality from pneumonia is higher in the rainy than in the dry seasons of the year; it would be of interest if this could be ascertained.

FIG. 4.



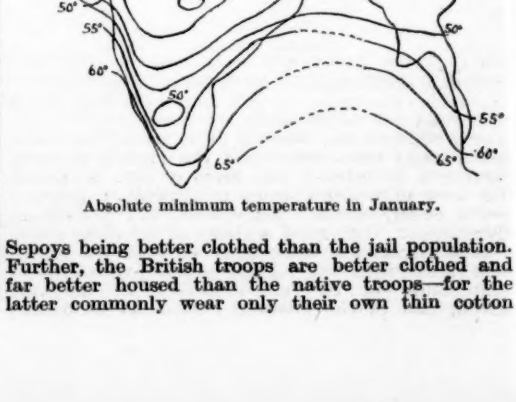
Diurnal range of temperature and winds in December.

EXPLANATION OF THE RECORDED DATA.

In my long pathological experience in Calcutta lobar pneumonia was invariably due to the pneumococcus, and R. H. Malone has recently reported[6] a serological examination of 106 strains obtained in North-West India, and found 28·3 per cent. of type I., 17 per cent. type II., 7·5 per cent. type III., and 47·2 per cent. of the unclassified type IV., one-fourth of which belonged to a single subgroup. This class of organism has a widespread distribution in the throats of human beings, and the onset of pneumonia has for long been attributed to lowering of resistance to the organism by chills, &c. The facts brought forward in this paper are fully in accordance with that hypothesis, especially in view of the habit of Indians washing in the cold early mornings in the open, clothed only in their thin cotton dhoties, or loin cloths, which are allowed to dry on them. The low minimum temperatures, combined with a remarkably wide diurnal variation of temperature, exceptionally dry atmosphere resulting in cooling through rapid evaporation of any moisture, and the cold northerly winds of the north-west divisions, in which exceptionally high pneumonia-rates are alone found, amounting to five to ten times that of the warm moist areas of South and East India with the lowest pneumonic-rates, can leave no reasonable doubt that chills produced by the conditions mentioned constitute the most important exciting cause of the frequent pneumonias of North-West India.

This view obtains some further confirmation from the incidence of pneumonia in the army in India, for I find that the rates in the Indian native army are distinctly lower in nearly every division than among the jail population, although the rate for the whole of India is slightly higher in the Indian army owing to so large a proportion of the regiments being stationed in the north-west area of high pneumonia-rates, the Sepoys being better clothed than the jail population. Further, the British troops are better clothed and far better housed than the native troops—for the latter commonly wear only their own thin cotton

FIG. 5.



Absolute minimum temperature in January.

clothing when off duty as well as at their morning open-air ablutions—so it is noteworthy that the British army pneumonia-rate for the whole of India is only 4·03 per mille, against 13·57 in the Indian army, in spite of so many of the British troops being stationed in North-West India during the cold winter, and most of them go to the hills for much of the year, where the pneumonia-rate is also high. It is of interest to note that the pulmonary tuberculosis distribution is almost exactly the opposite of that of pneumonia—namely, in the warm humid monsoon-swept divisions as shown in my recent paper.[2]

The relationship of pneumonia to great diurnal variations of temperature with a low minimum is also in accordance with the well-known frequency of pneumonia in Egypt due to chills induced by the very rapid fall of temperature after sunset, and Dr. Andrew Balfour informs me that the same is true of the dry areas of the Sudan. Forewarned is forearmed, so if the evidence brought forward in this paper leads to the more general recognition of the danger of chills under such conditions, and the necessity of guarding against them, many valuable lives may be saved, and one of the most serious causes of mortality in the world may in some degree be mitigated.

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SKIN TESTS,

ASTHMA AND IDIOSYNCRASY.

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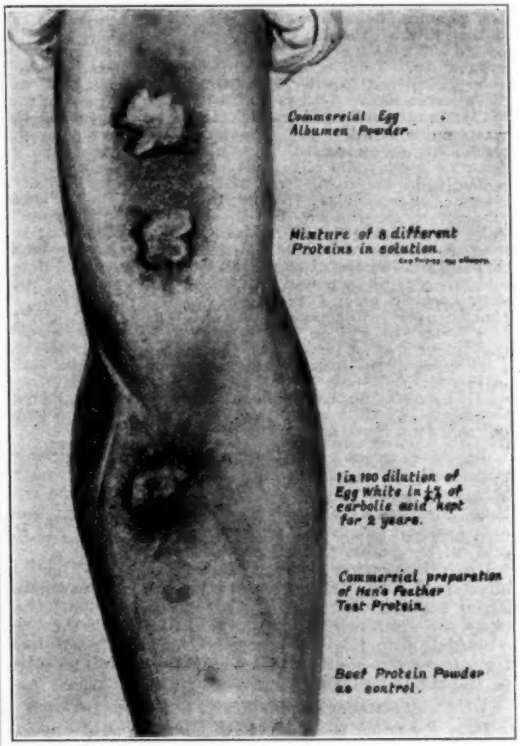
I BELIEVE that along the path of the study of idiosyncrasy great discoveries will be made. Certain obscure diseases which have hitherto defied convincing explanation may become elucidated. Under this denomination I would place asthma, migraine, recurrent urticaria, so-called essential œdema, perhaps cyclical vomiting, and other gastro-intestinal disturbances, eczema, and other skin diseases. There is no doubt that many skin eruptions are directly attributable to idiosyncrasy, and with some attacks of asthma the ætiological relationship seems as certain. It is necessary, however, to be critical, and not to be carried away by enthusiasm; for crazes in medicine are not creditable, and history contains too many examples.

The tests for discovering an unknown idiosyncrasy are so laborious, the chances of obtaining a truly positive reaction so precarious, the work and expense entailed in the preparation of suitable test substances so great, that the following points become of paramount importance: (1) Technique. (2) Confidence in the "activity" of the test substances. It is proposed to deal with these points and with the following:—The significance of the reaction. The therapeutic application of a proved idiosyncrasy. The efficacy of certain commercial test proteins.

Technique.

(*a*) *The Test Substance.*—If the test substance is in liquid form this is placed directly on the arm, which has previously been cleansed with ether. If in powder form a few drops of decinormal soda are placed on the arm and a few grains of the powder added to this. If dried on blotting-paper after the method of Freeman, a few drops of decinormal soda are used as above, the epidermis pierced in the manner to be described, and the square of blotting-paper placed on the soda solution. If the crude substance is to be used as a test, it can be ground up with decinormal soda and the test made with this. If desired it can first be shaken up with ether.

(*b*) *Method of Piercing the Epidermis.*—To ensure uniformity it is essential to have ocular evidence that the epidermis has been pierced. A mere scratch is unsatisfactory, as it is difficult to be certain that all parts of it are equally deep. I therefore use the following method. After placing the test substance on the arm as above a sharp needle is taken and the skin pricked very lightly and quickly with the point several times. In a few moments petechiæ appear, and these are clear evidence that the epidermis has been pierced, and each tested area may be made uniform. There is no pain if done carefully, and the method is therefore a good one for children.


Commercial Egg Albumen Powder
Mixture of 8 different Proteins in solution.
1 in 100 dilution of Egg White in ¼% of carbolic acid kept for 2 years.
Commercial preparation of Hen's Feather Test Protein.
Beef Protein Powder as control.

Reactions in an individual extremely sensitive to hen's egg, duck's egg, and hen's feathers. Counting from above downwards: Reaction 1 was obtained from a few grains of commercial egg albumin. Reaction 2 was obtained from a solution of eight different proteins, the individual being sensitive to the egg protein only. Reaction 3 proves that a solution of egg-white in ¼ per cent. carbolic acid will retain its "activity" for at least two years. Reaction 4 shows the failure of a commercial preparation to give a convincing reaction. A Victoria Park preparation of hen's feather protein powder in decinormal NaOH produced a reaction as big as 1. Reaction 5 a control.

(*c*) *The Type of Reaction* is seen from the accompanying illustration. The reaction must be unequivocal—no self-deception must be possible. If there is a true idiosyncrasy the reaction will be a large one.

(*d*) *Method of Group Testing.*—It is clearly impossible to test all the individual proteins separately. Theoretically any bird, beast, or fish, plant, tree or flower, fruit, vegetable, or fungus, may contain the offending substance. It is obvious, therefore, that unless they are grouped in some way the task of testing is impracticable. Clinical considerations may enable us to exclude certain things. For

example, if attacks of asthma occur nightly they are not likely to be due to turkey or grouse, and if they occur only occasionally it is improbable they are caused by hens' feathers or wheat. But even these exclusions will leave a very large number of things to be tested. Group testing is therefore imperative, and the best method of doing this has to be determined. Elegant preparations are offered by a few commercial firms, but some of these I have found inert. It appears that to be effective they must be of a certain strength. Some are easily prepared, others are not; and therefore fish and meat test proteins are apt to be more effective than animal hair preparations.

My own methods are as follows, and I believe them to be effective.

(1) Allied substances are ground up together and macerated in water with some crystals of thymol (e.g., all the common flat fish or all the common shell-fish). This is then filtered, the filtrate evaporated to dryness at 56° C. over a water-bath or in a vacuum, and the resulting powder ground up. This, used with decinormal soda, makes a good group test powder, consisting of proteins, salts, and other substances.

(2) Many proteins, of course, cannot be prepared in this way; not a powder, but a gummy syrup remains, which refuses to be desiccated by any process, or takes on the form of hard toffee. In this case one is compelled to redissolve in water while wet, and precipitate by alcohol or acetone, filter, and dry the precipitate in alcohol or ether. It must be ascertained that the fluid used is an equally good precipitant for each substance.

(3) A third method is to prepare the proteins separately in powder form, and then to mix them in equal quantities and dissolve or suspend in water or centinormal soda with carbolic acid ¼ per cent. Such a "solution" is effective, and will remain "active" for at least three or four years, as will be shown later on. This is a most convenient way of performing the tests, and it is the one I am using at the present time, saturated solutions being employed.

(4) A simpler method is of use in some cases—viz., boiling several foodstuffs together and testing with the filtrate, but this I am investigating further.

As an example, beef, mutton, pork, and egg were pounded up together and extracted with water; this was boiled and then filtered. The filtrate was then concentrated by evaporation. This was used as a test solution on an egg-sensitive subject (C. L. P.) and an enormous dermal reaction resulted.

The illustration shows that the group test is effective. Other cases have given the same result. From several experiments made it is evident that eight different proteins may be mixed together for a single group test. If a positive reaction is obtained from the group solution, then each individual member of the group must be tested out.

Activity of the Test Substance.

It is essential to know that the test substance is active. Various names have been given to this property of giving a dermal reaction, or of giving a somatic reaction—e.g., urticaria, diarrhœa, asthma, &c. By analogy with anaphylactic phenomena this property has been called anaphylactogenic; this, however, presumes an unproven theory. I shall therefore merely call it active in the sense in which I am speaking—i.e., capable of giving a dermal reaction, or of producing the characteristic reaction in the individual possessing the idiosyncrasy to it.

The only method I know of testing this activity is to make a test on an individual with a known idiosyncrasy. The value of this is, of course, greatly limited. I therefore asked Dr. S. R. Gloyne to inject guinea-pigs with different substances—various fish proteins, egg albumin, oat protein, &c.—to see if we could produce a sensitiveness to these substances and so have a method of testing their activity. No such sensitive state, however, could be produced.

Since this was written, Dr. J. Freeman, of St. Mary's, has demonstrated a remarkable experiment upon himself. Intradermal injections of serum from a hay-fever patient followed by intravenous injection of the appropriate pollen resulted in a huge urticarial reaction. Dr. Gloyne repeated this experiment for me on the guinea-pig and rabbit, but it gave a negative result. Serum from an asthmatic extremely sensitive to horse-hair was injected intradermally into a rabbit; within half an hour horse-hair protein was injected intravenously; no reaction occurred. The serum and the horse-hair protein were then injected simultaneously intradermally into a guinea-pig; again there was no reaction. We have, therefore, to rely on patients with a known idiosyncrasy. From many tests the following facts have emerged.

The powdered proteins if kept dry appear to remain active indefinitely. Powdered proteins suspended in ¼ per cent. carbolic acid in water or normal saline will remain active for at least three or four years.

1. In the spring of 1921 a little girl, K. W., who was extremely sensitive to egg, was tested with a 1 in 100 solution of egg-white with ¼ per cent. carbolic acid. A marked reaction was obtained. In March, 1925, this same solution was used on another egg-sensitive individual (C. L. P.); a very marked reaction was obtained. This had remained active for four years.

2. A solution of oat protein produced a marked reaction on W. A. in 1921; in 1923 another test was made with this same solution and a very marked reaction resulted.

Effect of Heat.—As shown above, with egg-white, boiling does not appear to destroy the activity of some of the test substances. As another example: The filtrate from macerated herring can be boiled and filtered, and the filtrate boiled again and filtered and still remain powerfully active, and thus one can obtain a perfectly clear fluid for testing or injection. R. P. Wodehouse[1] writes that J. L. Goodale showed that "as a general rule vegetable foods, boiled or moderately cooked in any way, furnished just as powerful anaphylactogens as the corresponding raw foods, thus eliminating, in these, all heat coagulable proteins as possible anaphylactogenic factors. In the case of the fruits, however, this is not so, for the weight of evidence seems to show that heating destroys their anaphylactogenic properties." This last statement I have not been able to test.

Significance of the Reaction.

A well-marked dermal reaction, if the controls are negative, usually denotes a sensitiveness to the substance employed, but it does not invariably follow that the subject has any pathological reaction to it in the ordinary course of life. One patient, for example, gives a well-marked reaction to rice protein, and has severe asthma. He can, however, eat rice without any apparent discomfort, and withholding rice produced no amelioration of his asthma, and no immunity from his attacks was given by subcutaneous injections of rice protein. In other cases, however, there is, without a doubt, a close and direct ætiological relationship. For example:—

While testing K. W., a little girl who is egg-sensitive, with egg albumin, the dermal reaction was intense, and the small amount of egg albumin absorbed produced asthma and vomiting and bloodshot eyes.

W. A. was extremely sensitive to oat protein, less so to middlings. I commenced by giving injections of middlings protein. One day a change was made to oat protein. In error my clinical assistant gave a larger dose than was intended and 4 minims of a 1 in 400 solution were given; the man was free from asthma at the time. In a few moments his eyes began to run profusely, then paroxysms of sneezing seized him, and in a few minutes his chest was in the throes of an asthmatic attack. Neurosis could not have played a part, for the patient was unaware of any change in the injection.

C. L. P., an egg-sensitive man, has very kindly allowed me to make a great number of experimental tests on his arm. Although large dermal reactions had been obtained many times no general reaction occurred. One day, however, I was testing with proteins obtained from birds' egg other than the hen and reptilian eggs. A very intense reaction was set up by duck's egg and I failed to wipe off the protein sufficiently soon. Nausea and asthma occurred.

W. B., a severe asthmatic, was extremely sensitive to horse-hair and to the pollens of *Holcus lanatus* (Yorkshire fog grass) and rye grass. He begged for heroic treatment. A comparatively big dose of horse-hair protein was therefore

[1] Boston Med. and Surg. Jour., August, 1916, Preparation of Vegetable Food Proteins for Anaphylactic Tests.

injected; within half an hour he had severe asthma, and within an hour he had urticarial lumps all over the body and in the angle of the left eye.

Application of a Discovered Idiosyncrasy.

This is not so simple as might appear from the literature. I have made hundreds of tests on scores of patients and cannot yet be enthusiastic about the practical outcome of it all, although I am convinced that the subject is worth pursuing. I have attempted to desensitise several patients, and though some of them have declared themselves improved, I have not succeeded in abolishing the dermal reaction. I have given injections of the following proteins: oats, fish, rice, cat's hair, horse-hair, and egg.

W. B. had a four months' course of injections of horse-hair protein and the pollen of *Holcus lanatus* and rye grass; at the end of four months his dermal reactions were still very marked (by this I mean a wheal the size of a florin and a red zone 8 cm. × 5 cm.), though he expressed himself as "a thousand times better."

These experiences are not in accord with those published by some other writers, who say that the dermal reaction progressively lessens with the progress of the treatment. Again, many patients with a known idiosyncrasy are absolutely compelled to avoid, and do avoid, the offending substance, and yet they have asthma. It is true there may be other things to which they are sensitive, but one is forced to the conclusion that we are far from the solution of the riddle, and one cannot fail to view very critically many of the glowing therapeutic results that have been published, and to wonder what the subsequent history of these patients will show. Asthma patients are extraordinarily susceptible to suggestion, and it is very hard to eliminate this factor, although I have tried to do so as far as possible in my cases. Some patients have been greatly benefited by the dermal tests which they imagined to be injections.

In any large series of cases treatment, on old traditional lines, with a mixture of potassium iodide, arsenic, lobelia, and stramonium, will yield a considerable percentage of satisfactory results, as also will treatment by vaccines. Moreover, asthma is so suspiciously like a neurosis in many ways that one has to be exceedingly careful before publishing results, and employing the famous *post hoc ergo propter hoc* argument that has done more than anything else perhaps to hinder the progress of medical science. There is no doubt that all the elaborate ritual of the skin tests greatly impresses the patient, and some of the substances used are so ludicrous that orthodox medicine appears to be left far behind and fascinating and mysterious vistas to be opening. The therapeutic effect of this cannot be ignored.

There is much work to be done. Every general practitioner can help. If he will keep his eyes open for cases of idiosyncrasy of all kinds he will find them. If he has a clue it is easy to make preliminary investigation with the crude article as mentioned above. Having obtained a reaction, it is then worth while having the pure protein made up by a good firm of chemists who are interested in this work, in different dilutions in carbol saline, say 1 in 100, 1 in 1000, 1 in 10,000, 1 in 50,000, and 1 in 100,000, and see which dilution fails to give a reaction. This having been determined, a strength intermediate between this and the next dilution should be used for injections, beginning with 0·1 c.cm. and working up to 1 c.cm., the rapidity depending on the reaction. After this the next strength is taken and so on. The results, whether positive or negative, should be published. Thus there will become available further materials for the study of idiosyncrasy and desensitisation.

Efficacy of Certain Commercial Proteins.

Whenever possible I have tested certain commercial test proteins on patients with a proved idiosyncrasy. Some I have found efficient, others inert. I am inclined to think that one firm loses a good deal of the protein in the filtering process employed. The preparations in fluid form are much more convenient to use than those in a boro-glyceride base. For group tests the solutions must be of sufficient strength.

So far as I know, only one firm employs the method of precipitating the pure protein by alcohol or acetone and immediately redissolving this, determining the strength of the solution obtained by an estimation of the nitrogen content. These test solutions, when put up as single tests, I have found active and productive of marked reactions. The multiple tests, however, I have not found uniformly satisfactory, probably because the concentration is not sufficiently strong in all cases.

Conclusions.

1. Group testing is efficient if the solutions employed are not too weak. 2. Proteins, it appears, will keep active in solution with ¼ per cent. or ½ per cent. carbolic for at least two years, and this is a convenient method of keeping test group solutions. 3. The best method of preparing proteins depends upon the use to be made of them. As a general rule it may be said that the powder form is the most satisfactory. Often, however, the powders become very insoluble, in which case precipitation and immediate re-solution is the best method. 4. It appears that many of the substances used can be boiled without altering their activity. 5. The existence of a dermal reaction, even a well-marked one, must not be taken as proof positive of an ætiological relationship between the substance producing this reaction and the symptoms of the patient, though it must not be ignored without consideration. 6. It is too early to dogmatise about the therapeutic application of the discovery of an idiosyncrasy. 7. To sit down to a case of some obscure malady with a miscellany of test proteins is not likely to yield any very useful result, but to investigate any case of strongly suspected idiosyncrasy, particularly from the point of view of desensitisation, and to publish it, will yield valuable material for the study of idiosyncrasy and its treatment.

I would express my great indebtedness to Dr. S. R. Gloyne, pathologist to the City of London Hospital for Diseases of the Heart and Lungs, for invaluable help; to Mr. Smart, Chief Laboratory Assistant, and to Mr. Laval Charles Proudfoot, who has most kindly, from motives of pure scientific interest, allowed me to perform a large number of experimental tests upon him.

CANCER OF THE BREAST.

AN ATTEMPT TO ESTIMATE THE DURATION OF LIFE AFTER OPERATION.

BY S. WYARD, M.D., M.R.C.P. LOND.,
ASSISTANT PHYSICIAN TO THE CANCER HOSPITAL (FREE), S.W.

AT the request of the Medical Committee of the Cancer Hospital I have endeavoured to trace all the patients operated on in the hospital during the years 1905–1914 inclusive; to determine the length of life after the operation; and, when the patient has deceased, the cause of death. In pursuit of this information 560 inquiries were sent out and 279 answers were received. Unfortunately, 11 of the answers contained only the bare statement that the patient is dead and I have failed to discover anything further concerning these. In 50 per cent., therefore, the case was traced directly. By the kindness and assistance of the Registrar-General search was then made through the registers of deaths for the remaining 281, with the result that the date and cause of death were ascertained in another 197, but the names of 84 could not be found in the registers. Of the latter nothing can be discovered. Some (possibly, or even probably, a considerable proportion) are still alive. The failure to trace any particular person may be due to the fact that she is still alive; that she has changed her name, either by marriage or otherwise; that she has left the country and resides or has died abroad; that, being still alive, she has changed her address and left at her old residence no informa-

tion by which it is possible to find her. Thus, of the 560 cases operated on in ten years the fate of 476 (85 per cent.) is known, though for 11 of these neither the date nor cause of death can be stated. So, then, 431 (77 per cent.) are known to be dead, 45 (8 per cent.) were alive at the time of inquiry (June, 1924)—i.e., they were alive ten years or more after the operation. Of those deceased 36 (6 per cent.) had survived ten or more years after operation, making a total of 81 (14 per cent.). Eighty-four cases remain, of whom nothing is known subsequent to their discharge from hospital.

How this lacuna in my information affects the final analysis is, of course, quite impossible to determine. It is possible that some are still alive. In any case the figures above, so far as they deal with survivals and the number who lived ten years or more after operation, are minimal, and were all the cases traced, could not suffer any diminution, but might, just possibly, be increased. These figures are perhaps more easily appreciated from Table I.

TABLE I.

Total number of patients.	Traced.							Total untraced.
	Total.	Living at date of inquiry.	Lived 10 or more years after operation.	Dead at time of inquiry.				
				Died of cancer.	Died of dis. other than cancer.	Cause of death unknown.	Total.	
560	476 (85%)	45 (8%)	81 (14%)	379 (68%)	41 (7%)	11 (2%)	431 (77%)	84 (15%)

Certified Causes of Death and Date After Operation.

Death was certified due to causes other than cancer in 47 cases, but in 6 of these—viz., phthisis 2, pleurisy and bronchitis 3, and pleurisy with effusion 1—there is a strong suspicion that the fatal lesion was in reality a secondary growth. It seems certain, however, that 41 (7 per cent.) of the deaths were not due to recurrence or metastasis. The causes certified were as shown in Table II.

TABLE II.

A. = Age at death. B. = Months after operation.

Disease.	A.	B.	Disease.	A.	B.
Cerebral hæmorrhage (10).	55	6	Accident (2)	43	18
	62	19		80	59
	64	14	Uræmia (2)	70	90
	64	156		73	120
	68	72	Gangrenous appendix	47	3
	69	84	Pneumonia:		
	70	66	Lobar	56	16
	72	126	Broncho	76	128
	74	36	Chronic rheumatism	69	33
	76	96	Pulmonary hæmorrhage	71	40*
Valvular disease of the heart (6).	58	104	Cirrhosis of liver	64	32
	68	20	Carcinoma of ovary	60	164
	69	24	Anæmia	44	12†
	69	34	Sarcoma of brain	47	14‡
	71	40	Diabetes	59	19
	73	56	Myxœdema	46	9‡
Acute bronchitis (4).	63	33	Insane	58	24
	64	58	Not known (2).	73	192
	69	74		79	84
	74	46			
Senile decay (1) (3).	64	180			
	65	17			
	75	9			

* An inquest was held and post-mortem examination made, but no cause for the hæmorrhage was found.
† Died in the Royal Northern Hospital, London.
‡ Died in one of the London infirmaries.

Classification of Cancerous Growths.

In order to determine how the stage of the disease at the time of operation influences the subsequent history of the patient it is necessary to devise some classification of cancerous growths. None with which I am familiar is entirely satisfactory, and I therefore made a very crude division of them into five groups. (1) A small nodule less than a walnut in size and without cutaneous involvement, or at most slight dimpling on picking up the skin. No clinical (glandular) metastasis. (2) A nodule larger than a walnut in size, with definite skin involvement, but no palpable glandular enlargement. (3) A small nodule as (1), but with palpable axillary glands secondary to it. (4) A large nodule as (2), but with metastases in the glands of axilla or neck. (5) A large ulcerating tumour with glandular extension.

The fallacies of this grouping are very obvious, but not more so than those of any other classification so far devised. In the first place, the size is no criterion whether the tumour is early or late from a pathological point of view. In the second place, axillary glands may be infected, but not palpable; in many cases the fact was noted that the patient was so stout that no useful palpation of the axilla was possible. It seems, however, justifiable to assume that, as a rule, a case without demonstrable glandular infection is in a pathologically earlier stage of development than one in which such infection can be clinically determined.

Type of Operation.

Many of the cases which form the basis of the following statistics underwent more than one operation. In one case after one breast was removed the second was found infected, and that, too, was later removed. In a few local recurrence made its appearance and a second or even third operation was performed to remove it. In all such cases the period of survival is measured from the date of the first operation until death.

To enter into details of the operation performed is no part of my present purpose. The series contains cases operated upon by many different surgeons, and probably no two of them adopted exactly the same technique. In practically every case, however, an attempt was made at radical excision. In one case a local excision of the mass was effected as a preliminary measure, the diagnosis being in doubt. Although microscopical examination proved the mass malignant, the patient refused further surgical treatment and was alive and well in June, 1924. Apart from an isolated case of this kind the scope of operation was always extensive, but its exact boundaries varied considerably. In nearly half the whole breast was removed with a wide area of skin and the sternal portion of the pectoralis major with its fascia. Sometimes the pectoralis minor was removed. A certain amount of the axillary fascia was dissected out, but no attempt made to clear the space or clear the vessels. In the remainder the axillary dissection was complete. In many the incision was carried down into the anterior abdominal wall and part of the muscular fascia removed. So far as I can determine, the supraclavicular glands were not in any case excised, but it is often impossible to discover from the notes precisely what was done in any particular case, so that no estimate can be made of the length of life after the various types of operation.

The following tables give an analysis of 465 cases—i.e., all the cases traced with the exception of 11, the date of whose death I failed to discover.

TABLE III.—*The Survival Rate.*

73	cases in	Group	1:	still alive	19	(26%)
58	"	"	2:	"	6	(10%)
162	"	"	3:	"	10	(6%)
132	"	"	4:	"	8	(6%)
40	"	"	5:	"	2	(5%)
465	"			"	45	(9%)

It is important to know what is the probability that the diagnosis of these cases is correct. In 38 of the 45 the malignant nature of the growth was confirmed microscopically (all were carcinoma); in two cases the pathologist reported the histological appearance as "suspicious"; while in the remainder (five cases) no record of pathological examination

can be found. Further, of all the cases which survived ten or more years after operation histological examination proved the lesion to be malignant in 61, but in 20 no record is available.

TABLE IV.—*Duration of Life After Operation.*

Including those cases still living, it is found that :—

54 cases in Group 1				survived an average of	5·6 years.
52	,,	,,	2		3·5 ,,
152	,,	,,	3		4·3 ,,
124	,,	,,	4		2·3 ,,
38	,,	,,	5		2·6 ,,

It appears, therefore, that, amongst other factors probably, the presence or absence of glandular involvement is of the utmost importance and its absence (even if clinical only) very materially improves the outlook. These figures are represented graphically in the diagrams (Figs. 1 to 6). The graphs represent the period of survival after operation.

the age of the patient, and taking all the groups together the same result is obtained. From these figures there is no evidence whatever that the age of the patient affects the prognosis or that cancer tends to be more malignant in the earlier decades of life than in the later.

Conclusions.

1. That if cancer is primarily a local disease and it may therefore be said that when local it is early, whatever the size or exact histological nature of the tumour, while it is late as soon as it reaches the lymphatic glands; then the earlier the disease at the time of operation the greater the possibility of completely eradicating it. The very earliest glandular infection enormously reduces the chances of cure.

2. The actual average duration of life after operation shown in Table V. is 4·6 years, but since some (9 per cent.) of the patients are still alive, and others (9 per cent. again) died of diseases other than cancer it is certain that the true average, qua cancer, is more than this, and probably approximates to five years.

3. The average duration of life *after operation* is greater by two years than that of unoperated cases

FIG. 1.

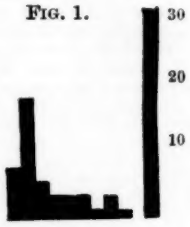


FIG. 2.

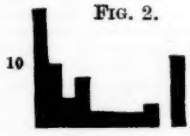


FIG. 3.

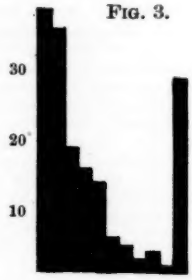


FIG. 5.

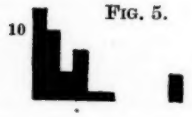


FIG. 4.

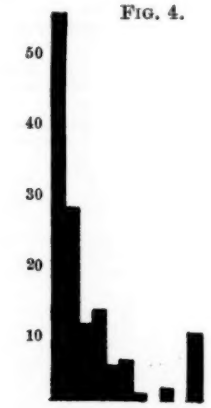
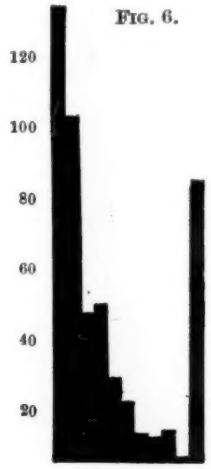


FIG. 6.



Graphs representing the period of survival after operation. In each figure the first column shows the number of persons who survived for one year or less, the second those who survived for more than one year and less than two, and so on to the eleventh column, which shows the number who survived more than ten years.

Fig. 1. All cases in Group 1 (Table IV.)
,, 2. ,, ,, 2 ,,
,, 3. ,, ,, 3 ,,
,, 4. ,, ,, 4 ,,
,, 5. ,, ,, 5 ,,
,, 6. The total cases. This figure is on half the scale of the other figures.

TABLE V.—ANALYSIS BY AGE GROUPS OF THE TOTAL CASES TRACED.

A. = Number of cases. B. = Average number of years survived.

Group No. ..	1.				2.				3.				4.				5.				Totals.	
Age Group.	Alive.		Dead.		Alive.		Dead.		Alive.		Dead.		Alive.		Dead.		Alive.		Dead.			
	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.
25–29 ..	—	—	—	—	—	—	—	—	—	—	4	7·3	—	—	1	2·6	—	—	—	—	5	6·3
30–34 ..	—	—	3	2·5	—	—	1	9·0	—	—	7	5·5	—	—	1	2·0	—	—	—	—	12	4·7
35–39 ..	2	11·0	1	7·5	1	13·0	3	1·9	1	12·0	10	2·9	1	19·0	13	2·1	—	—	2	6·0	34	4·0
40–44 ..	4	14·0	6	4·4	—	—	10	2·2	2	14·0	26	5·0	2	11·5	12	1·8	1	13·0	3	3·8	66	5·0
45–49 ..	6	15·1	11	5·0	1	15·0	4	8·5	3	15·7	26	4·7	1	14·0	20	1·8	1	14·0	9	5·3	82	5·8
50–54 ..	1	14·0	4	6·6	—	—	8	5·7	2	15·5	28	4·1	1	16·0	26	2·3	—	—	5	1·9	75	4·2
55–59 ..	3	14·3	12	9·1	1	10·0	9	2·7	2	11·0	20	3·9	2	16·5	19	2·0	—	—	7	1·5	75	4·9
60–64 ..	1	15·0	10	5·3	—	—	7	2·8	—	—	17	3·7	1	13·0	17	3·4	—	—	6	2·3	59	4·0
65–69 ..	1	11·0	5	4·9	1	10·0	8	2·6	—	—	12	4·0	—	—	9	2·6	—	—	5	1·2	41	3·4
70–74 ..	1	16·0	2	5·9	2	13·5	2	5·9	—	—	2	2·3	—	—	6	2·6	—	—	1	2·0	16	5·5
Totals ..	19	14·1	54	5·6	6	12·5	52	3·5	10	14·0	152	4·3	8	15·0	124	2·3	2	13·5	38	2·6	465	4·6

The next point is the influence of the patient's age upon the result of surgical treatment. Is the disease more malignant and less amenable to operation in a young person than in an elderly or old? Reference to Table V. shows that in each of the five groups the period of survival does not materially vary with

from onset to death. (The normal duration of unoperated cases averages three years.[1])

4. The age of the patient does not influence, one way or the other, the prognosis as regards ultimate survival after operation.

Clinical and Laboratory Notes.

A CASE OF RECURRENT PNEUMOTHORAX.

BY L. T. BURRA, M.D. OXF.,
TUBERCULOSIS OFFICER, BUCKS COUNTY COUNCIL.

THE following case is of interest as one in which there was recovery from pneumothorax, with a liquid effusion, and a recurrence of the condition about five years later with fatal issue :—

C. B., aged 31, enlisted in 1908, and was discharged from the army suffering from pulmonary tuberculosis in February, 1919.

History.—He first came under my notice in September, 1921, when he gave the following history. In November, 1918, while interned in Holland, he complained of pain in the right side of the chest and shortness of breath. Soon afterwards he was sent home, and pulmonary tuberculosis being diagnosed he was sent to the Brompton Hospital and afterwards to the Sanatorium at Frimley.

Condition on Examination.—When I examined him in September, 1921, he was in good general condition and the physical signs suggested quiescent disease of the upper part of the upper and lower lobes of the right lung with thickened pleura at the base—there was nothing suggesting pneumothorax; the left lung was free from abnormal signs. He came to one of the dispensaries at intervals, and showed a steady improvement in general health and in the condition of the lung, the symptoms and signs becoming less marked till Oct. 6th, 1923, when I was sent for urgently to see him at home. He was in bed complaining of pain in the right side of the chest for the past four days, with shortness of breath. He was lying down and was not in obvious distress—pulse 112, temperature 102·4° F. On examination I found typical signs of pneumothorax with a liquid effusion at the base. I explained the condition to him and he then said he had the same thing when first ill in November, 1918.

A few days later he was coughing up offensive purulent sputum, and two pints of offensive pus were withdrawn from the right pleura. This pus was swarming with T.B. He coughed up pus whenever the fluid reached the level of the sixth rib, and as he was losing ground and developed broncho-pneumonia of the left lower lobe, he was admitted to St. Bartholomew's Hospital. No operation for draining the pleura was undertaken owing to the condition of the left lung, but a considerable quantity of pus was drawn off by aspiration on one or two occasions; this pus did not show T.B. on examination.

He went down hill rapidly, and died about six weeks after the onset of the acute illness in October.

Post-mortem Examination.—At autopsy a complete pneumothorax was found on the right side with a perforation in the lower part of the upper lobe, and on the left side a recent widespread tuberculous broncho-pneumonia, presumably due to inhalation of pus from the right pleura.

In order to confirm the history of a previous pneumothorax, I wrote to Dr. J. F. Alexander, under whose care he had been in 1919; and in answer he wrote: "I remember C. B. well . . . . He had very definite signs of pneumothorax when I first saw him, coin sound, tinkling, and succussion splash. There was a lot of fluid at first, but this was gradually absorbed and before he left here there were no definite signs of pneumothorax . . . . There is no doubt about the previous pneumothorax."

I have only seen two papers referring to recurrent pneumothorax, both in the *Boston Medical Journal*,[2] but in the cases there recorded the condition seems to have been localised. Dr. Hyman Morrison, in his paper, quotes papers by Hamman (1916) referring to 16 cases, and by Marshall and Craighead (1918) referring to 43 cases; so that the condition apparently is not very uncommon.

[1] Lazarus-Barlow and Leeming: Brit. Med. Jour., 1924, ii., 266; Wyard: Ibid., 1925, i., 206.
[2] Hyman Morrison: Boston Med. and Surg. Jour., 1921, clxxxv., 659. John B. Hawes: Ibid., 1922, clxxxvi., 528.

I am indebted to Dr. Morley Fletcher, under whose care at St. Bartholomew's Hospital the patient was, for his permission to publish this note and for information as to the findings post mortem; and to Dr. Alexander for his description of the condition of his patient in 1919.

A NOTE ON THE TREATMENT OF PSORIASIS.

BY EDWARD C. B. IBOTSON, M.D. LOND.

PSORIASIS remains a conundrum as to its ætiology, occurring as it does at all ages and often in people in apparently robust health. Viewed in the light of the cutaneous disturbances that occur in myxœdema and the improvement frequently produced by thyroid extracts, one cannot but feel that endocrine disturbance plays a great part in it. When in association with rheumatoid arthritis one feels that it is a case then of combined toxis and defective internal secretion. That it sometimes terminates in cancer cannot be wondered at when one considers that the old stock treatment consisted in prolonged and increasing administration of arsenic. The following case illustrates the success sometimes rapidly attained by the use of thyroid extract internally combined with the external use of tar :—

CASE 1.—A recently married woman, aged 52, in apparently robust health, had had bad psoriasis for seven years, commencing at the age of 47. Her periods ceased only three years ago, so there was no connexion between their cessation and the onset of psoriasis. Her father, who died at the age of 85, had suffered from eczema but not from gout; one of his brothers had also suffered from eczema; paternal aunt died aged 85; uncle died aged 80; grandmother, mother's side, died aged 92; mother living, aged 72, never had any skin lesion but suffered from rheumatism; one sister living, one died at 15 of phthisis.

The patient, whom I first saw on August 28th, was tall, well-built, with healthy complexion, had never had any acute illness save the infantile complaints, measles and varicella, and had never been constipated. All vital organs working well; urine normal. She was much distressed by inveterate psoriasis, for which she had been previously treated by other medical men. Internally she had taken arsenic for long periods in increasing doses; also salicin and salicylate of soda. Externally she had had chrysarobin, salicylic acid, white precipitate, resorcin, and collodion. Nothing had done any good. Thyroid had not been tried.

Treatment.—I recommended her to reduce her diet to the minimum of meat and to live as much as possible on fish, fruit, vegetables, eggs, and milk. This was in view of thyroid treatment, which is considered to act more beneficially when little or no meat is taken. I put her on thyroid extract gr. i. (Burroughs and Wellcome) three times a day to be taken for three weeks; this was stopped for a week and then again resumed. I advised free purgation with Carlsbad salt. Externally she was to wash all the patches with warm water and soft soap twice a day to remove scales and then apply Hutchinson's paint, which consists of equal parts of liq. carbonis detergens, spirit vini rect., and liq. plumbi. subacet. B.P. She was also to wash the patches occasionally with ichthyol soap.

On August 28th there were large patches on the left elbow, front and back of both thighs, both knees, and front of both legs, on the lumbar spinal region, one on each hip, and one under the right ribs. There was also psoriasis of the nails of both hands. By Sept. 30th, under this treatment, all the patches had disappeared. The nails are still thin and are being treated with unguent. hydrargyri oxid. flav. The thyroid has been taken without any ill-effects, the pulse remaining absolutely normal.

Oct. 15th, 1924: The patient has continued on vegetarian diet and 3 gr. daily of thyroid extract. The skin remains absolutely clear and the diseased nails are beginning to be replaced by healthy ones. For them she has used ung. stanni. oleatis, ʒi to ʒi, as recommended by Dr. R. W. MacKenna,[1] of Liverpool.

April 8th, 1925: The patient remains free from patches, but she has had some red spots on the skin which disappeared after the application of scarlet red ointment. She also complains of dryness of the hair. This has ceased under pilocarpine and lanoline inunction.

May 20th: She remains quite free from psoriasis.

[1] MacKenna: Diseases of the Skin. Baillière.

I had another curious case illustrating the association of psoriasis and rheumatic fever.

CASE 2.—M. J., male, aged 35, came to me with psoriasis on Jan. 13th, 1921. Five days later he developed rheumatic fever and had a long illness. He came again to me on Dec. 1st, 1924, with psoriasis. I gave him an arsenical mixture, and on Dec. 3rd I was sent for to see him with rheumatic fever (temperature 102° F.).

April 8th, 1925: His temperature has long been normal, but he has pain in the shoulders. The psoriasis has not recurred.

The impression left on my mind is that if psoriasis be not an endocrine deficiency disease it is hard to explain in any other light.[1] I would be glad to hear the experience of others as to success with thyroid in psoriasis and as to recurrences.

Merioneth, N. Wales.

Medical Societies.

ST. MARY'S HOSPITAL INSTITUTE OF PATHOLOGY AND RESEARCH.

FILTERABLE VIRUSES.

THE fifth of a course of lectures on Pathological Research in its Relation to Medicine was delivered at St. Mary's Hospital Institute of Pathology and Research on May 28th, when Dr. W. E. GYE dealt with the filterable viruses. In his opening remarks the lecturer dealt with the history of these substances, remarking that some 40 or 50 diseases of animals were now ascribed to their activity with a fair measure of certainty. Among the human diseases included in the list were small-pox, chicken-pox, measles, and encephalitis lethargica. Of the large list of animal diseases, which included distemper, foot-and-mouth disease, rinderpest, and swine fever, he regarded pleuro-pneumonia of cattle and chicken plague as the only two in which the claim for the filtrable virus had been really substantiated. He described the difficulties with which the bacteriologist has to deal when attempting to investigate these organisms, owing to their minute size, about 0·15 of a micron, their hazy outline, and the impossibility of seeing them with ordinary microscopes. One theory put forward as to their nature was that they were liquids and living things at that; this was based on their ability to penetrate to the deeper layers of an agar plate. In the lecturer's opinion however, all the evidence pointed to their being living particulate organisms with nothing very mysterious about them; it was only their small size and the difficulty in their cultivation which stood in the way of their proper classification. Dr. Gye's own work in this matter had been concerned with the first of the three transmissible tumours described by Peyton Rous of the Rockefeller Institute in New York in 1911. This was a very loosely arranged spindle-celled sarcoma of the chicken possessing certain properties distinctive from all other similar tumours in that it was transmissible by a filtrate. It was also extremely specific, the experimental animals requiring at first to be related by blood to that in which the tumour originated. It was found that if this tumour were ground up, filtered through layers of sand and paper pulp, and passed through a candle, the resulting filtrate was capable of reproducing an identical tumour on injection into another bird. Dr. Gye, experimenting with this tumour, found that 1 c.cm. of the filtrate, which is singularly free, to all appearance, of any particulate matter, would produce a small, hard point under the skin at the side of inoculation in seven days, while in three weeks the bird had usually died with widely distributed metastases. Curiously, these secondary growths frequently occurred in the heart muscle. If one-quarter of a c.cm. of the filtrate were used with three-quarters of a c.cm. of Ringer solution to make up the total quantity, the resulting tumour appeared much later, if at all, so that the size of the tumour, within certain limits, was proportional to the amount of filtrate injected. He pointed out the objections to the use of the term "filterable virus," based on the fact that the filtrability of a substance depended on many conditions, such as the pressure, the time, and the presence of mucin and nucleo-proteins.

The next experiment was performed to determine whether or not there were anything particulate in this filtrate. It was centrifugalised at the rate of 9000 revolutions for two hours. It was then found that the inoculation of 1 c.cm. of the upper portion produced tumour growth after a slightly longer interval than did the inoculation of the lower portion from the centrifugalised tube. There thus appeared to be some evidence in favour of the presence of a particulate substance. If the supernatant fluid of a growth of the virus in sugar were treated in the same way there was very definite evidence to this effect, as the upper portion of the fluid then produced no tumour or only a very small one after a considerable interval, by which time the tumour produced by the inoculation of fluid from the bottom of the tube had attained a considerable size. The objection to be raised to this result was the possibility of masses of colloidal material being spun to the bottom of the tube and dragging the virus with them. In a further experiment some of the tumour filtrate had its pH reduced to 4·5 with acid phosphate, with similar results on centrifugalising. It thus appeared that there was sufficient evidence to justify the conclusion that the virus was particulate. If portions of the tumour were centrifugalised in Ringer solution a small amount of fluffy material would appear in the bottom of the tube. The supernatant fluid was carefully pipetted off this and it was then washed with two centrifugalisations with Ringer. The final deposit, when diluted with 1 c.cm. of Ringer, produced no tumour when inoculated into a chicken.

The dominant characteristic of the three tumours investigated by Rous was their peculiar specificity. The final experiments described by Dr. Gye were undertaken in an attempt to show that the specificity could not depend on the virus itself; it must be accompanied by something else which determined the specificity of the infection. If the filtrate were carefully mixed with chloroform and heated at 37° C. for three or four hours and the chloroform then removed by a pump, the inoculation of 5 c.cm. of the resulting filtrate produced no tumour, although less than 1 c.cm. of the original would have killed the bird. If pieces of tumour were dropped into culture medium and incubated for three days aerobically the culture fluid did not produce tumour formation. If, on the other hand, the benign fluids resulting from the two last experiments were mixed and inoculated a tumour resulted. Thus there appeared to be two elements in the filterable virus of this condition, a non-particulate portion and a particulate, living portion, invisible with ordinary microscopes. The proof that this was a virus depended on its cultivation, and this had been successfully done.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

A CLINICAL meeting of this Society was held in the Royal Infirmary on May 13th, Sir DAVID WALLACE, the President, in the chair.

Exhibition of Cases.

Three cases were shown for Dr. CHALMERS WATSON. The first was of a man suffering from disseminated sclerosis; an X-ray examination demonstrated ileo-colic stasis, and he had marked bacilluria. During treatment he developed acute appendicular symptoms with a recurrence of the symptoms of disseminated sclerosis, which had abated under intestinal treatment.

[1] Evolutionists might consider psoriasis a reversion to the fish or lizard type.

The second case was a man with an old specific history, who had been treated for sclerosis of the cord 11 years ago. A year ago he had an acute attack of nephritis, and while in bed his legs became gradually drawn up; there were marked ileal stasis and bacilluria. A third case of disseminated sclerosis had advanced oral sepsis. It was suggested that a toxin might be a cause of the sclerosis, and treatment was by an autogenous vaccine.

Mr. J. W. STRUTHERS showed a woman, aged 49, in whom a tumour had been removed from the jaw in 1916, who had returned with a swelling in front of the left tibia. On examination further tumours were found on both femurs. The tibial tumour, a myeloma, was removed easily; the surface growth was large, but it had a comparatively small extent in the medullary cavity. It was remarked that these so-called giant-celled tumours are often a feature of osteitis fibrosa and that they were probably local manifestations of the disease. Another case was shown which had been operated on a long time previously for a fatty tumour of the thigh; more recently four further operations had been carried out on the tumour as it recurred, finally as a fibroid sarcoma; this was interesting, said Mr. Struthers, as a fatty tumour is the only tumour which is supposed never to undergo malignant transformation.

Prof. D. P. D. WILKIE showed a man, aged 44, suffering from an arteriovenous aneurysm, caused presumably by a fragment from a bursting rifle grenade. After being a prisoner of war he went to Switzerland, where a swelling in his neck was noticed together with a bruit. He was discharged from the army. When now examined, he had obvious pulsatile swelling in the left side of the neck and prominence of the eye on that side with marked bruit over the swelling. On operation the vessels involved were found to be the common carotid artery and the jugular vein, the communication being of no great size, stout catgut was tied round the communication, leaving a lumen to both artery and vein. Immediately after tying the suture all buzzing ceased, and since then the eye had receded and symptoms had disappeared.

Mr. HENRY WADE presented a case of a pensioner suffering from tuberculous disease, involving the first and second lumbar vertebræ with a large psoas abscess on the right side; after due consideration it was decided to perform Albee's operation for fixation of the spine. A graft of about 10 inches was taken from the tibia and implanted from the tenth dorsal to the fourth lumbar spines; a plaster jacket was put on and left for three months, during which the psoas abscess was treated by aspiration. The patient now, after six months, was comfortable and walking about, whereas under more conservative treatment he would have had to spend two years in bed.

Mr. W. STUART showed a case of Dupuytren's contracture, where marked improvement had followed 14 injections of fibrolysin; the fingers were for all practical purposes fully extended. In his experience injections of fibrolysin gave better results than any other method; in a certain percentage of cases marked improvement resulted, but the method was uncertain. The injections must be into the palm, when given into deltoid or buttock he had had no success.

Mr. GEORGE CHIENE showed a case of carcinoma of the appendix in a man of 26; the disease was not deep-seated and it was a question whether a further operation should be done. A similar case in a woman operated on ten years ago had given no further trouble.

Mr. JAMES GRAHAM showed a case of an elderly man who seven years ago had suffered for two years from hæmaturia without symptoms other than anæmia; cystoscopy showed the blood to come from the left ureter, the right functioning normally; fearing the presence of a tumour the left kidney was removed. Lately a similar hæmaturia arose from the remaining kidney; this was examined and found to be affected by chronic interstitial nephritis, distinct but not marked with a thickened capsule. Decapsulation was performed, shortly after which the hæmaturia disappeared. The case was interesting, as it emphasised the fact that interstitial nephritis might be associated with profuse hæmaturia without other symptoms and that an apparently normal kidney with hæmaturia may be associated with pathological changes.

Dr. DOUGLAS GUTHRIE demonstrated a patient with early malignant disease of the vocal cord, which had been removed by laryngo-fissure. Local and general anæsthetics were used, the skin was injected with novocaine tinged with stain, tracheotomy was performed, and the larynx anæsthetised. The cough reflex was abolished and the growth removed with ease. A speedy recovery followed, and at the time of demonstration, ten weeks after, the patient had a good voice produced by fibrous tissue in place of the excised cord.

Mr. W. A. COCHRANE showed a case of a man aged 24 who was admitted to hospital as an "acute abdomen." On exploration two huge tumours of the size of oranges were found in the pelvis, which proved to be two separate foci of tuberculosis of the small intestine; a resection was performed and the patient made a good recovery. The tumours were of a hyperplastic nature rarely found in the small intestine.

Dr. JOHN D. COMRIE showed three cases illustrative of mental disturbances in neural syphilis. All showed strongly positive Wassermann reactions, and all improved under N.A.B., sulpharsenol or neo-silver-salvarsan, respectively.

Mr. W. QUARRY WOOD showed two cases in which bone cavities had been filled with muscle grafts. The first was in the case of a youth aged 19 with relapsing osteomyelitis of the tibia; the bone cavity was purified and filled by a muscle flap. The second case was of a similar condition in a man of 25, who had suffered for 14 years from osteomyelitis of the humerus. This was treated in the same way. In both cases excellent results had been obtained.

THE remarks attributed to Dr. G. W. Mitchell in the discussion on High Voltage and Radio-therapy, held at the Royal Society of Medicine (May 30th, p. 1131), were made by Dr. William Mitchell, of Bradford.

PROCEEDINGS OF THE ROYAL COMMISSION ON NATIONAL HEALTH INSURANCE.*

(*Continued from p. 1136.*)

EVIDENCE OF THE BRITISH MEDICAL ASSOCIATION.

THE statement of evidence now printed as Appendix XLVII. has already been summarised in our issue of May 9th, p. 993.

It was supported in oral examination by Dr. R. A. Bolam, Chairman of the Council; Dr. H. B. Brackenbury, Chairman of the Representative Body; Dr. H. Guy Dain, Chairman of the Insurance Acts Committee of the Association, and Dr. A. Cox, Medical Secretary. Supplementary evidence was given on certain points by Dr. H. J. Cardale, Chairman of the London Panel Committee; Mr. N. Bishop Harman,

* In previous articles the proceedings of the Commission were reported under the following headings: Introductory Note; The Scope of the Insurance Scheme (see THE LANCET, Jan. 31st, pp. 247–8); The Provision of Medical Benefit (Feb. 7th, pp. 301–3; Feb. 14th, pp. 355–6; Feb. 21st, pp. 403–5); Financial Provisions of the Act (Feb. 28th, pp. 454–7); Medical Certification and the Regional Medical Staff (March 7th, pp. 508–9); The Approved Societies and the Money Benefits (March 14th, pp. 564–5; March 21st, pp. 623–4); Evidence of the Hearts of Oak Society (March 28th, pp. 677–9); Evidence of the National Conference of Industrial Assurance Approved Societies and of the Manchester Unity Approved Society (April 4th, pp. 731–3); Evidence of Independent Order of Rechabites, of Rational Association Friendly Society, and of Miners' Societies (April 11th, pp. 784–6; April 18th, p. 839); Evidence of Mr. Alban Gordon (April 18th, pp. 839–40); Evidence of Joint Committee of Approved Societies, of Stock Exchange and Lloyds' Health Insurance Societies, and of Group of Catholic Approved Societies (April 25th, pp. 889–91); Evidence of the National Insurance Beneficent Society (May 2nd, pp. 943–4); Evidence of the British Medical Association (May 9th, pp. 993–5); Evidence of the British Dental Association and other Dental Organisations (May 16th, pp. 1044–6); Evidence of the Insurance Committees (May 23rd, pp. 1097–8); Evidence of Various Approved Societies (May 30th, pp. 1135–6).

Honorary Treasurer of the Association, and Dr. Stanley Hodgson, Chairman of the Salford Panel Committee.

(Q. 14605.) At the outset the representative character of the evidence was made clear, Dr. Brackenbury stating that there were only two main points upon which there was any difference of opinion. One was with regard to the inclusion of dependants in an insurance scheme, some considering it doubtful whether they should be included even on the restricted basis set out in the Memorandum, while others, a minority, regarded their inclusion as a matter of urgency. The other point was with regard to the question of an appeal to the courts of law, a considerable minority holding the view that there should be such an appeal on all grounds instead of on some only as proposed in the statement of evidence.

(Q. 14607–8.) Generally, the recommendations would be found to be in the direction of continuance of the present scheme with contractions in certain directions and extensions in others, considerable stress being laid on establishing and strengthening the relationship of such a scheme to the other health services, public and voluntary.

An Improved Atmosphere and an Improved Health.

(Q. 14612–20.) The panel service is working in an improved atmosphere. Doctors are coming on the panel in increasing numbers, and where in the profession there was formerly active antagonism in certain quarters, this has resolved itself into indifference. On the insured person's side, Dr. Brackenbury said :—

(Q. 14612.) We have, as general practitioners, the almost universal experience that insured persons are much more willing to come to us and to take advantage of their opportunities instead of exhibiting prejudice or making the remark that they came unwillingly.

Insured persons seek advice in the early stages of disease, and this is directly preventive in its effects. The gain to the comfort of the individual in knowing that he can have medical attention whenever he needs it, and sickness benefit experience which points to a reduction in national sickness, both mean a considerable gain in the national health. As to the quality of the service, Dr. Brackenbury said that there was no truth in the statements made that the panel service was an inferior one.

(Q. 14621.) Do you think that the insurance practitioners as a class give their professional best to the insured persons, though such service is given under a contract and paid by capitation and is under a certain degree of State regulation ?—In spite of those three things I am sure it is a fact that each doctor in relation to his own patients does give of his professional best.

Dr. Cox added to this that the insurance system had given the medical profession itself a greater control over the service than it ever had before under any collective system, and this had given it an increased interest in the success of the system.

Complaints as to the London Service.

(Q. 14623–14654.) On a question here interposed by Sir Humphry Rolleston as to statements made to the Commission that in London there were more complaints about the service than elsewhere, Dr. Cardale said that in 1924 there were only 87 formal complaints as compared with about 7 million attendances—a quite insignificant fraction. Apart from formal complaints, Dr. Cardale suggested that much prejudice was created in London in regard to the service by occasional press stunts, and this was emphasised by Dr. Cox, who stated that there had always been a section of the press who would do almost anything to damage the Insurance Act. He instanced a visit to an editor to urge him to publish a letter which he had prepared in reply to a very damaging attack, and eventually extracts from Dr. Cox's letter appeared in such a way as to give a wrong impression. The editor told him quite deliberately : " You must remember we are not out to help to defend the Act ; we are out to try to kill it."

Dr. Brackenbury pointed out that London and Edinburgh were very largely the centres of organised or expressed antagonism to the Act at the beginning, and that there was still a lower proportion of general practitioners doing insurance work in those places than elsewhere. To be perfectly fair Dr. Brackenbury added that :—

(Q. 14653.) One must say that in the poorer parts of London there is a tendency sometimes, by no means always, and only in a minority of cases, to get a doctor who is himself a bird of passage there.

He also said :—

We may have many insured persons concentrated much more largely than in any other place who are clerical workers or insured persons who are on the margin and who, in a few years' time, will be going out of insurance, and we find that that is the class of person who complains more about the working of the Act than any other, not really from facts but from prejudice, impressions derived from second-hand sources if you like. I think you will find amongst the real industrial population that there is no more feeling in London than there is elsewhere.

Persons to be Provided for.

(Q. 14671–2.) The number of general practitioners doing insurance work in relation to those not on the panel is roughly 3 to 2, the numbers being estimated at 14,700 and 10,000 respectively.

(Q. 14666.) As evidence of the extra work thrown on the insurance practitioner, Dr. Cox referred to the Plender Report issued when the Insurance Bill was being prepared in 1911, which showed that the average number of attendances on the population in certain industrial areas was 1·33 per year, whereas the insured person now gets not less than 3·75 attendances. For this reason amongst others it would appear that there must be some line of demarcation within the insurance scheme so that it should be available (Q. 14689) only for those persons who would be unable to obtain it without the help of that scheme.

The application of this principle involves the question of a broad income limit.

(Q. 14692.) In the public provision of education we have no such criterion. The public elementary schools are open to all, irrespective of income. Do you not think there is a parallel here ?—No. I think it is a false parallel altogether. There would be a parallel if it is considered that the State ought to have full control of the provision of education on the one hand, and full control of the individual's health on the other, but we are presupposing that it is to be done by means of a contributory insurance scheme. If it is to be done by means of a contributory insurance scheme there is no parallel at all.

Correspondence to Private Practice.

(Q. 14710–14724.) With regard to the principle laid down in the Memorandum that the conditions of the insurance medical service should approximate as nearly as possible to those of private practice, Dr. Brackenbury said that they were in a condition of apprehension for the future rather than criticising the working of the scheme in the past. Among the really important things in this connexion was the individual relationship between the doctor and his patient.

(Q. 14710.) Anything that encroaches upon the confidential individual relationship between doctor and patient we view with suspicion and with the feeling that it will, though it may have some other advantages which we are perfectly prepared to consider, destroy or tend to destroy what we believe to be one of the fundamental things that enables us to do the good work which we hope we are doing.

In later evidence Dr. Brackenbury pointed out that with one exception—

(Q. 15213.) The contract and relationship between the doctor and the patient is the same in insurance practice as in private practice. In private practice there is, though not a written, a perfectly legal contractual relationship between the doctor and the patient. The doctor undertakes to devote his utmost skill and care to the attention of the patient, and if he does not do it the patient can sue him at law. There is, therefore, a definite legal contractual relationship, though unwritten, between doctor and patient.

In private practice, it is true that a doctor has a right to refuse to attend an applicant even in an

emergency. Under the insurance system he has no such right,

so that with that one exception, which is after all scarcely an exception at all, because it is merely putting into a contract what is habitually done from motives of humanity, the relationship between doctor and patient is exactly the same whether under the insurance system or otherwise.

In regard to free choice of doctor, Dr. Cox said that this was not a fetish, but a fundamental of human nature.

(Q. 14717.) I have never yet myself met any individual who would not object very strongly to being told that he could not have his own choice—whether it was foolish or not—in the matter of a doctor. In fact, there are some people who are so foolish as to want to choose their own tailor or their own Member of Parliament, or other things which are much less important.

The Objection to Clinics and to a State Medical Service.

In explanation of their objections to a system of clinics the witnesses said that they had in mind premises staffed by a limited number of persons, and limited to a certain extent of practice. In certain rural areas and in certain densely populated industrial areas it might be convenient to have a common consulting-room and surgery at the same premises rather than have the poor rooms which doctors in those poor areas can manage to obtain.

(Q. 14720.) We have no objection to the premises as such in cases where it seems desirable to provide them, provided the other circumstances can remain the same, that is to say, that every doctor can have access to them for his own patients and that any patient is not obliged to be attended by a particular doctor.

Clinics, however, as generally understood, diminished freedom of choice and moved away from the intimate individual relationship of doctor and patient towards a State medical service.

On this question generally Dr. Bolam said :—

(Q. 14779.) May I say, as one who is not an insurance doctor, that the feeling in the profession is that the prime relationship should be between the doctor and the individual, and not between the doctor and a Government department, or any lay body. That is the essence of the whole matter. . . . In the case of a purely whole-time State-salaried medical service there is not the incentive to deserve the confidence of the individual. The effort is . . . directed rather in other channels.

Questioned as to the possibility of a national medical service permitting of a choice of doctor, Dr. Brackenbury replied :—

(Q. 14767.) If you can elaborate a National Health service scheme which will give as great freedom of choice to the individual patient as exists under the present circumstances, of course that objection falls to the ground ; but we have not seen any approach to that in any national scheme.

Surgery Accommodation.

(Q. 14741–3.) Complaints as to surgery and waiting-room accommodation have been very few and not very important.

They really came largely during the tremendous influenza epidemic of 1918 when there were people who had to wait even outside to see the doctor, because there was no room in the waiting-room. You cannot make in private houses or in surgeries, or even in institutions, complete provision which would always cover the biggest emergency.

In some crowded areas there are actual physical and structural difficulties in improving the accommodation, and the inconvenience is felt equally by private and insurance patients.

A Bias Towards Prevention.

(Q. 14752.) As illustrations of the bias towards prevention in insurance practice, cases were quoted of an insurance practitioner who sought out his patients during an influenza epidemic and offered them preventive inoculation, and of another delivering health lectures to his patients.

(Q. 14828.) This bias towards prevention was cited later as the principal advantage of a capitation system of payment as compared with that of payment by attendance, where there must be a bias away from prevention and in the direction of multiplying attendances.

(To be continued.)

THE GENERAL MEDICAL COUNCIL.

SUMMER SESSION.

PENAL CASES.

EIGHTEEN penal cases came before the Council during the session. The cases were heard in public ; the Council deliberated on them in camera, and the results were publicly announced as usual.

TUESDAY, MAY 26TH.

Cases Reported by the Dental Board.

The following cases were reported by the Dental Board of the United Kingdom to the General Medical Council.

The Case of John Begg, registered on Dec. 3rd, 1904, as of 11, Montgomery-street, Edinburgh, L.D.S.R.C.S. Edin., 1901, was considered by the Dental Board on May 12th. Mr. Begg had been convicted at the Edinburgh police-court on three occasions for drunkenness, and the Board found that his name ought to be erased from the Dentists Register. The Council considered the case and remitted it back to the Dental Board for further inquiry and report.

The Case of Samuel Robertson Crosbie, registered on March 3rd, 1923, as of 21, Hamilton-street, Camden Town, London, N.W. 1, " Dentist, 1921 " was considered by the Dental Board of the United Kingdom on May 12th. The Dental Board, having considered the conviction against Mr. Crosbie, reported as follows : On May 12th, 1925, the said Samuel Robertson Crosbie attended before the Board, and was duly heard. Mr. Crosbie asked for an adjournment for three months or until the next session of the Board, on the ground that he hoped to have his case reopened in the Court of Criminal Appeal or by the Home Secretary. Mr. Crosbie had been convicted at the Essex Quarter Sessions held at Chelmsford on Jan. 2nd, 1924, of embezzlement and fraud and had been sentenced to 12 months' imprisonment with hard labour. The Dental Board found that his name ought to be erased from the Dentists Register. The Council directed that it be erased.

The Case of James Gray, registered on June 25th, 1924, as of 16, Eglinton-street, Belfast, " Dentist, 1921," was considered. The Dental Board reported that Mr. Gray had systematically canvassed in Belfast for patients by personal visits and by employing an agent or agents to canvass on his behalf. The Board found that his name ought to be erased from the Dentists Register. The Council directed that it be erased.

The following cases concerning medical practitioners were considered by the Council.

The Case of Shridhar Bheekajee Gadgil.—This practitioner, registered as c/o Nat. Bk. of India, Fort, Bombay, L.M.S. U. Bombay, 1898 ; M. 1900, F. 1915, R.C.S. Eng. ; L.R.C.P. Lond., 1900, whose case was adjourned from May 28th, 1924, had been convicted on Sept. 21st, 1923, and fined for insulting behaviour. Dr. Gadgil was present accompanied by Mr. Oswald Hempson, his solicitor. The President stated that Dr. Gadgil could not be tendered as a witness as the Council had already decided that the conviction had been proved. Further letters of recommendation from Dr. Gadgil's professional brethren were put in. The Council decided not to erase Dr. Gadgil's name from the Medical Register.

The Cases of John Joseph Brennan and Vivian Thomas Pearce Webster.—The case of John Joseph Brennan, registered as of Maeryrhaf, The Walk, Merthyr Tydfil, L.R.C.P. Edin., 1892 ; L.R.C.S. Edin., 1892 ; L.F.P.S. Glasg., 1892, had been adjourned from Nov. 27th, 1924. Dr. Brennan had been charged with signing and issuing a medical certificate, dated March 26th, 1924, which was " untrue, misleading, or improper." Vivian Thomas Pearce Webster, registered as of Tygwyn, Merthyr Tydfil, M.R.C.S. Eng., 1910 ; L.R.C.P. Lond., 1910, had a similar charge laid against him. His case had also been adjourned

from Nov. 27th, 1924. As both these practitioners had been warned at the last session of the Council as to the gravity of lax certification, and having regard to their conduct since the last hearing, the Council did not see fit to erase their names from the Register.

The Case of Henry Love, registered as of Avoca, Mitcham, Surrey, M.B., U. Dub., 1878; L.R.C.S. Irel., 1878, adjourned from May 28th, 1924, was that he had, in contravention of the Midwives Acts of 1902 and 1918, enabled uncertified women to act as midwives. The Council, having considered the evidence as to Dr. Love's conduct in the interval from his brother practitioners, did not see fit to erase his name from the Medical Register.

The Case of Henry Spencer Hughes, registered as of Galen House, Lozells-road, Birmingham, M.R.C.S. Eng., 1894; L.R.C.P. Lond., 1894, adjourned from May 30th, 1924, was next dealt with. He had been arraigned on a similar charge to the preceding case. The Council gave a decision as in the case of Dr. Love.

The Case of Noweroji Merwanji Tarachand, registered as of Mansfield, Nottingham, M.R.C.S. Eng., 1893; L.R.C.P. Lond., 1893, adjourned from May 28th, 1924, was concerned with signing National Health Insurance certificates in a misleading manner. The Council, taking into account Dr. Tarachand's assurance as to his future attitude as regards truthful and accurate certification, did not see fit to erase his name from the Medical Register.

WEDNESDAY, MAY 27TH.

The Case of Henry James Burke, M.C.—This practitioner, registered as of Ivy House, Hadfield, Derbyshire, L., L.M. 1913, R.C.P. Irel., L., L.M. 1913, R.C.S. Irel., had been convicted: (1) At the Glossop police-court of driving a motor-car in a manner dangerous to the public; (2) at the same police-court, of being drunk in charge of a motor-car; and (3) at the Mottram Petty Sessions, of being drunk in charge of a motor-car. Dr. Burke attended, and was accompanied by Mr. Whittingham, of Manchester, his solicitor, who put in testimonials from brother practitioners. These convictions were proved to the satisfaction of the Council, but judgment was postponed until May next, with the usual proviso as to character and conduct in the interval. The President commented on the significance of such convictions which indicated a habit that might be dangerous to a professional man, to the public, and to the patients under his charge.

The Case of Sureswar Sarkar.—This practitioner, registered as c/o Grindlay and Co., 54, Parliament-street, London, S.W. 1, L.R.C.P. Edin., 1907; L.R.C.S. Edin., 1907; L.F.P.S. Glasg., 1907; L.M.S.U. Calcutta, 1905, had been convicted at the Assizes held at Leeds on March 16th, 1925: (1) Of attempting at Sheffield in January, 1924, to rape Lilian May Potter; (2) of indecently assaulting her and like offences on other dates, of raping her and administering a drug to her with intent to stupefy in May 1924; and (3) of indecently assaulting Eva Potter in January, 1924. The sentence was five years' penal servitude. Dr. Sarkar did not attend in answer to his notice, nor was he represented. The Council directed the Registrar to erase Dr. Sarkar's name from the Medical Register.

The Case of John Edward Rees.—This practitioner, registered as of Glandwr, Tresaith, Cardiganshire, L.R.C.P. Edin., 1913; L.R.C.S. Edin., 1913; L.R.F.P.S. Glasg., 1913, had been convicted of the following misdemeanours, viz.:—(1) On April 5th, 1921, at the Lower Troedyram Petty Sessions (Cardigan) of being found drunk on the highway; (2) on May 15th, 1922, at the Cardigan Borough Petty Sessions of being found drunk on the highway in charge of a motor cycle; (3) on May 15th, 1922, at the Cardigan Borough Petty Sessions of being found drunk on licensed premises; (4) on Feb. 3rd, 1925, at the Newcastle-Emlyn Petty Sessions of being found drunk in charge of a motor car; (5) on Feb. 3rd, 1925, at the Newcastle-Emlyn Petty Sessions of driving a motor car on the highway in a manner dangerous to the public. Dr. Rees attended in answer to his notice, accompanied by Mr. Daniel Johns, his counsel, instructed by Mr. J. C. Williams, solicitor, of Carmarthen. Witnesses were called to testify as to Dr. Rees's character, and a petition signed in his district against his erasure from the Register was put in. Judgment was postponed until May next with the usual proviso as to character and conduct in the interval.

The Case of Albert Edward Woolfe Sandelson.—This practitioner, registered as of 347, Bury New-road, Higher Broughton, Manchester, L.A.H. Dub., 1923, had been summoned to appear before the Council on the instance of the Salford Local Medical and Panel Committee, it being charged against him that he had made certain false entries in his day-book with regard to a patient, Thomas Walter Lodge, under the Medical Benefit Regulations, 1924, for the purpose of claiming remuneration in respect of attendance on a patient from the Salford Insurance Committee. Dr. Sandelson attended in answer to his notice, accompanied by Mr. T. Eastham, K.C., with him Mr. Melville, his counsel, instructed by Gisborne and Co., solicitors. In the absence of a complainant the Council's solicitor placed the facts before the Council. He stated that the matter was brought to the notice of the Council by the Ministry of Health and put in a copy of the finding of the Salford Committee and other documents relative thereto. Mr. Eastham then addressed the Council on behalf of Dr. Sandelson, and read statutory declarations by Mrs. Lodge and her husband. These were in certain points at variance with the evidence they had given before the Salford Committee. The judgment of the Council was that the facts alleged against Dr. Sandelson had not been proved to the satisfaction of the Council.

THURSDAY, MAY 28TH.

The Case of Alex. John Douglas Cameron.—This practitioner, registered as of Adelaide House, Northampton, M.B., Ch.B., 1909, U. Aberd., was on Oct. 17th, 1924, convicted of unlawfully killing John Rowlatt Corner, and was sentenced to be imprisoned in the Second Division for nine calendar months. Dr. Cameron attended in answer to his notice, accompanied by Mr. Alex. Neilson, K.C., his counsel, instructed by Messrs. Le Brasseur and Oakley, solicitors for the London and Counties Medical Protection Society. The Council's solicitor placed the facts before the Council. He put in the certificate of conviction and read extracts from the depositions at the trial. Mr. Neilson addressed the Council on behalf of Dr. Cameron, read nine statutory declarations testifying to the good character of Dr. Cameron, and put in a copy of the judge's summing-up at the trial. The Council decided not to erase Dr. Cameron's name from the Medical Register.

The Case of Sydney Edgar Price.—This practitioner, registered as of Dudley Port House, Dudley Port, Tipton, Staffs, L.R.C.P. Edin., 1899; L.R.C.S. Edin., 1899; L.F.P.S. Glasg., 1899, appeared on the following charge: That, being a registered medical practitioner, he was responsible for and, moreover, countenanced the issue to 11 patients of 32 misleading and improper National Health Insurance certificates, in that he allowed his clerk dispenser to sign and issue them in his (Dr. Price's) name and on his behalf. Particulars were then given. Dr. Price attended in answer to his notice, attended by Sir Henry Maddocks, K.C., his counsel, instructed by Mr. F. W. Green, solicitor, of Dudley. The Council's solicitor handed in the report of the Medical Services Subcommittee of the Staffordshire Insurance Committee. Sir Henry Maddocks tendered Dr. Price as a witness on his own behalf and examined him. Dr. Price was cross-examined by the Council's solicitor and answered questions put to him by the chair, by members of the Council through the chair, and by the legal assessor. In the course of the cross-examination of Dr. Price, it was elicited that Dr. Price had 2500 patients on his panel, for 700 of which he himself did the dispensing. During the month of January, 1925, Dr. Price's

signature was attached to 140 insurance prescriptions, only one of which signatures he recognised as being his own. For the defence it was urged that Dr. Price's clerk had been with him for 16 years. The clerk had since died. The Council found the facts alleged against Dr. Price to have been proved, and the Registrar was directed to erase Dr. Price's name from the Medical Register.

The Case of Charles Nathaniel Barton.—This practitioner, registered as of 88, Redcliffe-gardens, South Kensington, London, S.W. 10, L.S.A. Lond., 1896; M.R.C.S. Eng., 1897; L.R.C.P. Lond., 1897, was arraigned on the charge of committing adultery with a married woman with whom and with whose family he stood in professional relationship, of which adultery he was found guilty by the decree of the Probate, Divorce, and Admiralty Division (Divorce) of the High Court of Justice, dated Oct. 22nd, 1924, and made absolute on May 4th, 1925. Dr. Barton appeared in answer to his notice, accompanied by Mr. Oswald Hempson, his solicitor. The Council's solicitor placed the facts before the Council. He stated that the divorce case was not defended, but that Dr. Barton now denied professional relationship.

The hearing of this case was concluded on Friday, May 29th. The Council found that the facts alleged against Dr. Barton had not been proved to the satisfaction of the Council.

The Case of Austin Heron.—This practitioner, registered as of Mullindrait House, Stranorlar, Co. Donegal, L., L.M. 1924, R.C.P. Irel., L., L.M. 1924, R.C.S. Irel., had been convicted on Feb. 12th, 1925 (in the name of William Gallagher), at the Sutton Petty Sessions of "unlawfully, wilfully, openly, lewdly, and obscenely" exposing his person in a public highway with intent thereby to insult certain females. Dr. Heron appeared in answer to his notice. He was not accompanied by counsel or solicitor. The Council found that the conviction was proved to the Council's satisfaction, but judgment was postponed for a year with the usual proviso as to character and conduct in the interval.

FRIDAY, MAY 29TH.

The Case of Wilfred Edgar Levinson.—The case of W. E. Levinson, registered as of 5, College-road, Brighton, L.R.C.P. Lond., 1911; M.R.C.S. Eng., 1911, was considered on Friday afternoon and the hearing was continued on Saturday, May 30th. The hearing not being concluded by 1 P.M. on this day, the counsel moved an adjournment until June 4th, when the hearing of this case will be resumed.

REPORTS OF COMMITTEES AND OTHER BUSINESS.

Restorations to Register.

At a meeting of the Executive Committee on Monday, May 25th the Registrar reported that, the prescribed conditions having been duly fulfilled in each case, the names of the undermentioned persons had been restored to the Medical Register, from which they had been erased in conformity with the provisions of Section 14 of the Medical Act, 1858:—

Charles T. Andrew (S.), Edward V. Briscoe, Muljibhai K. Dalal (S.), Robert E. Cameron (S.), Stanley D. Craig (S.), Alban Dixon, John Holmes, Clermont Grantham-Hill, George F. Hulme (S.), Edward C. MacDermot (I.), Marion E. Mackenzie (S.), Farquhar McVean (S.), Leopoldo C. Mascarenhas, Arthur G. M. Middleton, Louis S. F. R. Norman (S.), Thomas M. O'Donnell (I.), Reginald F. M. Overton (I.), Hon. George H. Scott (S.), Henry A. Speed, and John Wreford.

S. = Scotland; I. = Ireland.

Reciprocity of Medical Practice.

As a result of the re-establishment of reciprocity of medical practice between Great Britain and Italy the Committee resolved to place on record their gratification at the satisfactory conclusion of this matter; and that the thanks of the Council be transmitted to the Privy Council, the Foreign Office, and the British Ambassador at Rome for their valuable assistance.

A letter was read from the Registrar of the College of Physicians and Surgeons of Province of Saskatchewan saying that there was no desire to retain British reciprocity if that involved inter-provincial reciprocity and reciprocity with countries other than Great Britain. It was never their intention that reciprocity should include any except bona-fide British graduates registered by the Council. A letter was written to Saskatchewan on March 21st, 1925, asking if the Council had met, and if they had any further observations on the subject to send. A reply was received, dated May 4th, stating that at the last meeting of the Council no further action was taken. They did not wish to terminate British reciprocity, in so far as bona-fide British graduates were concerned; but, if it meant indirect registration, this could not be agreed to. It was therefore resolved:—

That a communication be addressed to the Lord President, pointing out that as reciprocity between Saskatchewan and this country had ceased, owing to the recent change of the Provincial law, His Majesty in Council should be moved to rescind the Order in Council of 1915, applying Part II. of the Medical Act, 1886, to the Province of Saskatchewan.

With regard to reciprocity in New Brunswick, following several communications, it was resolved:—

That a further communication be addressed to the Council of Physicians and Surgeons of New Brunswick, pointing out that the General Council have no power to agree to their suggestions, and that, unless full reciprocity is maintained, the Council will be compelled to take the same action as in the case of Saskatchewan.

Indian Universities.

A communication was read from the India Office stating that Colonel R. A. Needham, C.I.E., I.M.S., had been reappointed to act as inspector on behalf of the Council. Reports by Colonel Needham in regard to the Universities of Bombay and Lucknow were presented to the Committee. It was resolved:—

(*a*) That under the same conditions as before, the recognition granted to the M.B., B.S. degrees of Bombay and Lucknow be continued till June 30th, 1926; (*b*) to inquire what are the relations between the Municipal College of Bombay and the University; the Lady Hardinge College, Delhi, and the University of Lahore; and the Vizagapatam College and the University of Madras.

Tanganyika.

A communication was read, dated Feb. 6th, 1925, from the Principal Medical Officer at Dar-es-Salaam, saying that the Government medical staff and the few private practitioners were inadequate for the wants of the country, and that the exclusion of medical aid from the native population was a policy that should be avoided as far as possible. He stated that an M.D. of Illinois, of the Lutheran Mission at Moshi, had applied for registration, and that sub-assistant surgeons, whose qualifications did not permit of registration, might be licensed while in Government service. It was suggested that the Principal Medical Officer or a board of three registered practitioners, one of whom should be the deputy P.M.O., might be empowered to use their discretion in licensing to practise such persons as they considered possessed suitable or sufficient medical qualifications for the purpose, keeping in view the limitation of their field of work, except in emergency, to the native population. By direction of the President the P.M.O. was informed that no objection would be made by the Council if, by an amendment to the ordinance, power were given to the proposed board of three to issue an annual licence to such persons as were named. The Committee approved the reply sent to the P.M.O.

South Australia.

At the meeting of the Committee on May 22nd, 1922, a communication was read from the South Australia Medical Board, calling attention to their Medical Act of 1921, in which it was prescribed, inter alia, that no registration fee should be payable by a person already registered in a country forming part of His Majesty's Dominions, if there were reciprocal arrangements in regard to the matter,

and asking for its consideration by the Council. The Committee resolved :—

(*a*) That the South Australian Medical Board be informed that the Medical Council has no power to discriminate between one class of registrable practitioners and any other in respect of original registration fees; (*b*) that the Board be further informed that the Council has no power to levy an annual fee on registered practitioners in lieu of one commuted fee, as appears to be the case in South Australia.

A further communication was read, dated March 17th, 1925, from the South Australia Medical Board, suggesting that there was no actual legal difficulty in the way of effecting reciprocity of registration between Great Britain and the State of South Australia on payment of a nominal fee, and asking that the matter should once more receive consideration. It was resolved :—

That the Committee adhere to their view of the English law as to their powers, and that they have nothing further to add to their previous resolution.

Zanzibar.

A communication was read, dated May 15th, 1925, from the Colonial Office, transmitting a copy of the Medical Practitioners Decree, 1925, of Zanzibar, which was a decree to compel medical practitioners to notify deaths in certain cases.

Methylated Spirits.

A communication was read from the Customs House, of April 9th, 1925, enclosing draft regulations, and stating that to meet objections which have been raised to the inclusion of pyridine in mineralised methylated spirits it was proposed as an experimental measure to allow the sale of industrial methylated spirits—i.e., unpyridinised—for medical and surgical purposes other than internal use by registered chemists and druggists under certain conditions. It was resolved to refer the matter to the Pharmacopœia Committee.

Transfer from Colonial List to English List.

The Committee considered an application from Alfred Spitteler, who was registered in the Colonial List on Nov. 14th, 1899, in virtue of the degrees of M.D., C.M. 1897, U. Madras. He desired to have his entry transferred to the English List, as he had since obtained the qualifications of M.R.C.S. Eng. 1905, L.R.C.P. Lond. 1905, and D.P.H. Lond. 1900. It was resolved :—

That the name could be registered in the British List in virtue of the British qualifications on payment of the usual fees for the registration of additional qualifications, and could appear in both lists, with a cross-reference; but that the name could not be transferred from the Colonial to the British list.

Cancellations.

A communication was read from the Royal Faculty of Physicians and Surgeons of Glasgow stating that the diploma of Mr. Haydn Brown had been recalled and cancelled during the pleasure of the Faculty. (This practitioner still possessed the L.R.C.P. Edin., 1892, and the L.R.C.S. Edin., 1892.)

Communications from the Royal Faculty of Physicians and Surgeons of Glasgow were read stating that the diploma of Mr. D. W. Anderson had been recalled and cancelled during the pleasure of the Faculty, and from the Royal College of Physicians of Edinburgh, stating that the diploma of Mr. Anderson had been suspended sine die.

Examination Committee.

This report was received and its recommendations adopted on the motion of Sir Norman Walker (chairman of the Committee) on May 29th. In the discussion following the motion, Sir Leslie Mackenzie commented on the fact that there was no examination on infectious diseases and said that the definition of infectious diseases was widening every day. Prof. Littlejohn said that in some of the examining bodies forensic medicine was not included in the final examination. He said he would raise this matter again at the next session on another report.

Education Committee.

This report was received and entered on the minutes on the motion of Dr. J. Y. Mackay (chairman of the Committee). It dealt with questions concerning the acceptance of the senior leaving certificates of the Ministry of Education of Northern Ireland, leaving certificates of the Intermediate Education Board of the Irish Free State, and the certificate of preliminary education given by the Provincial Medical Board of Nova Scotia. It was resolved to accept these certificates with certain provisos.

Public Health Committee.

This report was presented on Friday, May 29th, by Sir John Moore, chairman of the Committee. The first part of the report related to annual returns and interpretation of rules with regard to diplomas in public health during the year 1924: 465 candidates were examined for the First Examination, of whom 319, or 68·6 per cent., passed, and 146, or 31·4 per cent., were rejected. For the Second and Final Examination, 406 candidates presented themselves, of whom 312, or 76·85 passed, and 94, or 23·15 per cent., failed. During the year the University of Liverpool gave exemption to four persons, but none of them called for special comment. No other body granted exemption during the year.

Communications from the University of Liverpool suggested (*a*) that a sanitary staff officer of the R.A.M.C. might be allowed to give the certificate in public health administration required by Rule 3 (1) (*f*) of the old rules so far as venereal diseases, inspection and control of food, and inspection of premises were concerned, and that a medical officer of health might be given discretionary powers to accept such certificates from army candidates; and (*b*) that the responsibility of accepting a certificate of a duly qualified M.O.H. in the Dominions (or a sanitary staff officer in the Army) might rest with the University. It was resolved :—

That the Committee were unable to entertain these proposals, or to grant the suggested concessions; and that the University be referred to the Council's letter of Jan. 9th, 1925.

A communication has been received from the University of Toronto asking what steps must be taken in order to have the D.P.H. of that University recognised. The University were informed that the recognition could not be granted under the provisions of Section 21 of the Medical Act, 1886.

A communication, dated April 6th, 1925, was received from the University of Lucknow forwarding a copy of the following resolution passed at the meeting of the Academic Council of the University on Sept. 24th, 1924 :—

That the General Medical Council be approached to recommend to the examining bodies in Great Britain and Ireland that the latter be moved to grant exemption to those candidates who have successfully completed training at the Lucknow University in one or more subjects (excepting English sanitary law) for the Diploma in Public Health so as to enable them to appear for the D.P.H. of those bodies without undergoing a further course of instruction in those subjects.

It was resolved :—

That the Council cannot delegate to any licensing body in Great Britain and Ireland the power of granting such general exemptions as are asked for in the resolution of the Academic Council of the Lucknow University, dated Sept. 24th, 1924.

Applications in exceptional cases for concessions with regard to study for the Diploma in Public Health which had been submitted by the English Conjoint Board were considered and decisions were given in accordance with the rules.

Pharmacopœia Committee.

This report, on the motion of Sir Nestor Tirard, was received and approved on May 29th. The number of copies of the British Pharmacopœia,

1914, sold by the publishers between Nov. 24th, 1924, and May 22nd, 1925, was 940 copies. The number sold in the year ending May 22nd, 1925, was 2155 copies. This number was slightly lower than that for the preceding year. The total number sold since the date of publication was 49,007. A new issue of 5000 copies has been prepared. No typographical corrections were found to be required. The Government has appointed four delegates to the international conference on the unification of pharmacopœial formulæ to be held in Brussels next September, and had asked Sir Nestor Tirard, as representing the Committee, to act as chairman of the British delegation. The Committee resolved that the time had arrived for taking preliminary steps towards a revision of the British Pharmacopœia, 1914, and had given instructions for the usual inquiries to be addressed to the several governmental and medical authorities concerned, and to other bodies interested. The preparation of a new edition would necessarily occupy several years and would entail a large amount of work, to assist in which Dr. Philip Hamill, lecturer on pharmacology and therapeutics at St. Bartholomew's Hospital Medical School, had been appointed as secretary.

Dental Education and Examination Committee.

The report on the inspection of the qualifying examinations in dentistry and dental surgery held during the years 1923 and 1924 was received and adopted on the motion of Sir James Hodsdon, chairman of the Committee. The last cycle of inspections of the examinations for degrees or diplomas qualifying for registration in the Dentists Register took place in 1911. At the May session, 1923, Mr. J. Howard Mummery was appointed inspector, and the first inspection took place in June, 1923, the last in December, 1924. The inspector reported upon all the Final Examinations for a degree or licence in dentistry or dental surgery, with the exceptions of the University of London and the University College, Cork (National University of Ireland), and Mr. Mummery was thanked by the Council for his valuable reports and suggestions. The recommendations ending the report of the Committee having been moved, were considered in committee by the whole Council, and were adopted in amended form.

Finance Committee.

The report of the Finance Committee for the year 1924, presented by Sir Holburt J. Waring, Chairman of the Committee, was eminently satisfactory, the assets of the General and Branch Councils having increased by practically £8000. About £7000 of this is shown to be a surplus, and while the total income is higher by £1850, the total expenses have only been higher by £844. A wise warning closes the report, to the effect that the considerable savings which have been effected for some time past will enable the Council to meet deficiencies should they occur in the course of the next few years. The number of students entering for the final examination during this year will again be high, but the highest level of receipts has probably been passed.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED MAY 23RD, 1925.

Notifications.—The following cases of infectious disease were notified during the week, namely:—Small-pox, 136; scarlet fever, 1629; diphtheria, 752; enteric fever, 37; pneumonia, 1060; puerperal fever, 43; cerebro-spinal fever, 11; acute poliomyelitis, 4; encephalitis lethargica, 91; dysentery, 2; ophthalmia neonatorum, 114. There were no cases of cholera, plague, or typhus fever notified during the week. The number of small-pox cases showed a decrease of 21 from the number for the preceding week.

Deaths.—In the aggregate of great towns, including London, there were 2 deaths from enteric fever, 105 from measles, 16 from scarlet fever, 87 from whooping-cough, 22 from diphtheria, and 62 from influenza, as compared with 58, 68, 100, and 139 in the four preceding weeks. In London itself the deaths from influenza numbered 10, from whooping-cough 26, and from diphtheria 6.

SMALL-POX IN HERTFORDSHIRE.

A CASE of small-pox has been notified from the district of Radlett, Hertfordshire. The patient is the Vicar of Radlett, who returned from Switzerland on May 14th. Dr. Hyslop Thomson, county medical officer of health, gives us the following information: The rash appeared on May 28th. The patient had been twice vaccinated successfully, the last time in 1910. He was again vaccinated in 1919 but ineffectively. The type of small-pox appears to be the Eastern type modified to some extent by vaccination; the patient had a severe illness with an initial temperature of 103°, but is now improving The precautionary measures taken have consisted in closing the schools, vaccinating and supervising all direct contacts, and carrying out disinfectant measures in the district. No further case has been notified up to date.

Reports and Analytical Records.

INFANTILE DIETETIC MEALS: (1) MEAD'S RECOLAC; (2) MEAD'S CERTIFIED COD-LIVER OIL.

(MEAD, JOHNSON AND CO., 40–42, LEXINGTON-STREET, W. 1.

WE have received from this firm the two following preparations: (1) Mead's Recolac, a humanised milk powder, reconstructed to resemble human milk as nearly as possible in physical and chemical properties, and (2) Mead's certified cod-liver oil. (1) Mead's Recolac is a desiccated reconstructed milk requiring the appropriate proportion of water to make a fluid approximating to the composition of the average mother's milk. The butter-fat in the milk is replaced by a mixture of vegetable and animal fats, cod-liver oil entering into the mixture, and the sugar adaptation consisting of lactose with the addition of dextrose and maltose; only a part of the casein is returned in the form of potassium caseinate, derived from the whey of fresh cows' milk, as obtained from properly inspected dairies. Full instructions how to prepare the foods are issued with the preparation, which is put up in a handy tin. (2) This is a standardised cod-liver oil for use in the indicated cases, rickets being the condition definitely aimed at. We are informed that the oil is biologically tested, the requirement here being that ¼ per cent. of the oil added to a definitely rickets-producing diet will cure experimental rickets in rats in five days. The oil is put up neatly in brown bottles as a protection against possible deterioration through light.

JECOMALT.

(A. WANDER, LIMITED, 184, QUEEN'S GATE, S.W. 7.)

This is yet another method for the administration of cod-liver oil and malt extract, and we are informed that the oil present is Norwegian and of the finest quality obtainable, while the malt extract made by this firm has long been recognised as being produced with thorough care. The indications for jecomalt are those which would be expected from its make-up, while its palatability should be a recommendation where infants or invalids are concerned. In this connexion the guarantee of the manufacturers that 30 per cent. of cod-liver oil is incorporated is interesting, as there is complete absence of the characteristic odour and taste.

BELLAFOLINE.

(THE SANDOZ CHEMICAL COMPANY, LTD., CANAL-ROAD, BRADFORD.)

This is an extract from the leaves of belladonna which it is believed represents the total active alkaloids in purity and constant proportion, the superiority over atropine being suggested by the fact that only the equivalent of one-half to two-thirds of the usual dose of atropine need be given in order to obtain the desired effect. Bellafoline "Sandoz" is supplied in bottles of 20 tablets, each containing 0·00025 g., in bottles containing 10 c.cm. of the strength of 1 to 2000, and in cases of six ampoules, each containing 0·0005 g. The recommended dosage is one to two tablets, or 20 to 30 drops, three times a day, while hypodermically from one-half to two ampoules can be administered.

THE LANCET.

LONDON: SATURDAY, JUNE 6, 1925.

THE INTER-STATE ASSEMBLY.

THE Inter-State Post-Graduate Assembly of America, directed by the Tri-State District Medical Association of that country, have held their annual Congress in London this week under the presidency of Dr. CHARLES MAYO, and from the report we are able to give in other columns it will be gathered that the occasion has been thoroughly successful. The doctors from the States and from the Dominion of Canada have been offered in London full opportunities for a great post-graduate gathering; our Crown and Government, our medical organisations and institutions, with their authorities and staffs have coöperated to welcome the visitors from scientific and social aspects alike. The gathering is one of real scientific importance, as a definite movement of coöperation between the English-speaking peoples for the furtherance of medical progress. The movement, thus described by Dr. CHARLES MAYO at the inaugural session of the Assembly, cannot have any restriction implied by the use of a language; it is the glory of medicine that it knows no national confines, and what America, this country, and our dependencies do to advance medical learning will benefit all nations and stimulate all to add to the common wisdom.

PENALISING PROFESSIONAL EFFICIENCY.

IN a test case recently decided by Mr. Justice ROWLATT, the High Court has held that for income-tax purposes a county medical officer of health is not entitled to deduct the amount of his subscriptions to medical societies. The particular medical officer subscribed to the Royal Society of Medicine, the Society of Medical Officers of Health, the Royal Institute of Public Health, and the Association of County Medical Officers of Health. It is certainly a liberal list, but the Inland Revenue Authorities will not let him deduct any of the four subscriptions. They do not say the list is too long; they merely say that as a county medical officer he is not obliged to be a member of any of these bodies in order to earn his salary or hold his office. On the other side it was urged that, if a medical officer subscribes to institutions of this kind, he spends the money "wholly, exclusively, and necessarily" in the course of discharging his duties efficiently. Towards this apparently unanswerable contention the High Court was unsympathetic. Subscriptions to professional societies, the cost of buying professional literature, and any other expenses which keep a man fit for the work he is doing, cannot be deducted. If this concession were allowed, said the learned judge, anybody belonging to any profession would deduct all that sort of expenditure, and there would be no end to it.

If this is the law, we think it time it was changed. There is a matter of principle at stake. The State ought to give no kind of encouragement to the idea that, once a man has obtained a post as health officer, he can go to sleep professionally for the rest of his life. Medical science does not stand still. A medical officer who shuts his eyes to fresh discoveries or to the records of experience in other areas is like a lawyer who ignores current law reports and takes no notice of new Acts of Parliament. To keep abreast of the advances in sanitary science is a task which needs all the stimulus and assistance which medical societies can give. To perform this task is the first duty of a health officer. It should be the law that a professional man, in calculating his taxable income, may deduct whatever charges are reasonably necessary to maintain professional efficiency. The words "reasonably necessary" may be a little indefinite, but Parliament has not been afraid to use them in recent legislation. In practice an allowance of, let us say, £10 might well be permitted (subject to production of receipts if required) for cost of membership of professional societies and purchase of professional literature. In the case under discussion the sum at stake between the Inland Revenue and its victim was a matter of a few shillings only. The ingenuity of counsel for the Inland Revenue might, we suggest, be better employed in examining and checking serious cases of tax evasion in other walks of life rather than in penalising the efficiency of professional classes on whom the income-tax already presses hardly enough.

ULTRA-VIOLET IRRADIATION.

THE use of the ultra-violet end of the spectrum in the treatment of disease has arrived with rather disconcerting rapidity. The Royal Institute of Public Health devoted to the subject nearly the whole of one of its discussions at Brighton during the last week-end, and Dr. J. SAIDMAN'S monograph,[1] which has just appeared, is based on an analysis of 600 published articles as well as on 12,000 applications of his own. The medical profession generally regards with just suspicion any therapeutic agent which is claimed to have a beneficial effect on a large number of varied conditions. An exception may have to be made in the case of ultra-violet irradiation. Its use in the cure and prevention of rickets, first described by HULDSCHINSKY in 1919, has now passed from the realm of medical novelty to that of orthodox treatment. The same might be said of its use in surgical tuberculosis. Apart from these two outstanding examples, there are numerous conditions, seemingly unrelated, which are being at present tentatively treated by light therapy with encouraging results. But the ramifications of this new science, for such it virtually is, reach far beyond the sphere of practical medicine. One or two examples from the recent literature may serve to illustrate this. In a paper on Irradiated Foods and Irradiated Organic Compounds,[2] STEENBOCK and DANIELS briefly review the salient points in the relationship between the action of cod-liver oil and of ultra-violet light, and discuss the evidence which led STEENBOCK and his collaborators to irradiate the food in place of the subject. The position at present is that by irradiating such foods as wheat, rolled oats, meat, milk, and egg yolk they claim to be able to confer on them anti-rachitic properties. The compounds capable of activation are probably cholesterol in animal tissue and the phytosterols in plants. These researches lead very close to the core of the whole vitamin problem, and from the practical point of view they suggest new possibilities in therapeutics. In another sphere, that of agriculture, a paper by Dr. J. M. HENDERSON, from the Rowett Institute, Aberdeen,[3] opens up yet wider possibilities as to the part artificial ultra-violet light may yet play. In this work a very definite quantitative estimate of the effect of irradiation on

[1] Les Rayons Ultra-violets en Thérapeutique. Paris: Gaston Doin. Fr.65.
[2] Journal of the American Medical Association, vol. lxxxiv., No. 15. [3] Biochemical Journal, xix., 1, 1925.

calcium and phosphorus retention was obtained by balance experiments on growing pigs. The pig is notoriously susceptible to rickets and the demand of this quickly-growing animal for those elements is very great. The effect of irradiation is correspondingly marked. In some cases where rations badly balanced as regards the mineral content were being given a daily retention of 0·5 g. CaO was raised to 2·5 g. In view of these findings it would seem that the byre lit by rows of carbon arc lamps in winter, or even the irradiated pig-stye is no mere fanciful picture. The question suggests itself as to the relative importance of irradiation of the subject on the one hand and of the food on the other. While no doubt a great practical future lies with food irradiation it seems improbable that this method can call out all the many reactions which are known to result from direct irradiation of the organism.

THE SLEEPING SICKNESS COMMISSION.

THE interest shown by the Health Organisation of the League of Nations in tropical disease is a very welcome and opportune development of the League's work. Many primitive countries still offer a fruitful field for investigation, and nowhere is this better exemplified than in Central Africa. An international investigation upon the great scourge which hangs like a thunder cloud over many of the most fertile regions of the earth will be welcomed by all who have the welfare of the Dark Continent at heart. Whole-hearted international coöperation is essential to control the spread of trypanosomiasis; without it the most energetic and drastic measures applied by individual governments must fail. Central Africa is controlled by six European powers, and the time has now come when a combined effort is necessary in order to rid the whole region of the one scourge which is retarding its commercial and intellectual development. Measures designed to limit the spread of trypanosomiasis, or, if possible, to exterminate it, must necessarily be based upon a complete knowledge of the many factors upon which the spread of the disease depends; it is most necessary that existing gaps in our knowledge should be filled as far as is possible. The conference which recently assembled in London under the chairmanship of Mr. W. G. ORMSBY-GORE, as reported in our last issue, was composed of experts of world-wide reputations. Dr. ANDREW BALFOUR and Dr. A. G. BAGSHAWE, the British representatives on the Expert Committee of the League, are to be congratulated upon the comprehensive character of the proposals which were put forward for the consideration of the conference, and which were to a great extent ultimately adopted.

The selection of the new Commission to carry out the Expert Committee's recommendations will afford satisfaction to all workers in tropical medicine. Dr. LYNDHURST DUKE, who will direct the labours of the Commission, has been known for many years as an indefatigable worker on trypanosomiasis. Dr. KLEINE, who has spent many years in East Africa, is a most devoted student, who first worked out the developmental cycle of *Trypanosoma gambiense* in the tsetse-fly, and by courageously inoculating himself with animal blood containing trypanosomes was able to prove the non-pathogenicity of *T. brucei* for man. The Commission is fortunate to have the coöperation of Mr. C. F. M. SWYNNERTON who, as an authority on zoology, especially the big game of Africa, has made the study of tsetse prevention his own. The appointments of a biochemist and entomologist are necessary in order to make such a comprehensive inquiry complete. It is a matter of considerable satisfaction that this International Commission will work on British territory and will enjoy the facilities provided by Dr. DUKE'S laboratory at Entebbe. The exact rôle played by the big game in the spread of trypanosomiasis to man offers many points of primary importance which should soon be settled. The whole of this difficult problem is at present in an unsatisfactory state, and so is the part played by the commoner domestic animals. Zoologists, veterinarians, and sanitarians are equally concerned in its solution. Another important point is the exact relationship between the three important pathogenic trypanosomes—*T. gambiense*, *T. rhodesiense*, and *T. brucei*—and the explanation of the degrees of virulence displayed by these organisms in different areas. Especially attention will doubtless be paid to the most practical methods of exterminating the tsetse-fly. Whether entire extermination is feasible is open to question, but much can be accomplished in greatly reducing the numbers of the fly in populated areas, as Mr. SWYNNERTON has shown.

Much more accurate and carefully controlled work is necessary in order to determine the value of the more recent trypanosomicidal drugs—we may mention especially "Bayer 205" and tryparsamide. Are these drugs more efficacious when given singly or, as some think, is their action more rapid and effective when non-metallic and metallic substances are combined? The combination of antimony tartrate with "Bayer 205" is another possibility which has already suggested itself to workers on these lines. The prophylactic value of trypanosomicidal drugs both in men and in animals requires reinvestigation, for it is obvious that, were any protection against infection made possible, the limitation of the spread of trypanosomiasis in Central Africa would be rendered comparatively simple. The labours of the Commission will be watched over with very great interest by the governments concerned, and its members will have the sympathy of the whole medical profession in their work.

A CENTRAL PHARMACEUTICAL LABORATORY.

IN the course of his presidential address at the annual meeting of the Pharmaceutical Society of Great Britain on May 20th, Mr. F. Pilkington Sargeant stated the decision of the Council to establish a laboratory for the standardisation of the substances which are the subject of the provisions of the Therapeutic Substances Bill. The standardisation of such substances as serums, vaccines, glandular preparations, organic arsenic preparations, cannot, of course, be undertaken by chemical means, and there is a field of work here which at present does not belong either to the province of the doctor, the pure chemist, or the pharmacist, although Mr. Sargeant claimed it for the pharmacist. There is at present no institution where the average pharmacist can receive training in the preparation of such substances. The lines on which the laboratory should be established are to be in the hands of an advisory committee on which the General Medical Council has appointed Sir Nestor Tirard as its representative, the Medical Research Council Dr. H. H. Dale, and the British Medical Association Sir Humphry Rolleston. The value of such a laboratory is apparent. While the medical profession will find it chiefly to reside in the examination and standardisation of therapeutic substances, the pharmacist will value most the possibilities afforded for training and research work. Some such step has long been felt to be essential if the pharmacist is to keep pace with the ever-progressing march of medical science.

Annotations.

"Ne quid nimis."

THE BIRTHDAY HONOURS.

THE list of medical men included in the Birthday Honours issued on June 3rd is headed by Sir John Bland-Sutton, President of the Royal College of Surgeons of England, who has been created a baronet. Sir John Bland-Sutton is so well known as a wise professional leader, a scientific pioneer, and an open-handed benefactor of medicine, that all his colleagues will recognise the rightness of the honour awarded to him. Three medical men have been given civil knighthoods, Mr. James Berry, Dr. Harry E. Dixey, and Dr. John Robertson. The honour to Sir James Berry will give particular pleasure to a wide group of friends, colleagues, and pupils, and also to the far wider circle who are aware of the energy and devotion which he displayed during the war with the Red Cross Unit in Serbia. Sir John Robertson, the medical officer of health for Birmingham, is the well-known professor of public health in the University and a leading authority on such far-reaching questions as housing and milk-supply. Sir Harry Dixey is the chairman of the West Worcestershire Unionist Association and has done much public and political work deserving of reward.

Other honours are to be recorded along various lines of service. Major-General S. G. Moores, late R.A.M.C., becomes a K.C.B., and Surgeon Rear-Admiral Alexander Maclean receives the C.B. Dr. James Crawford Maxwell, colonial secretary of the Gold Coast Colony, becomes K.B.E., while the C.B.E. has been awarded to Dr. E. L. De Chazal, superintendent, Victoria Hospital, Mauritius, and Dr. V. R. Ratten, superintendent, Hobart Hospital, Tasmania. Dr. A. A. Morrison, British delegate on the International Maritime, Sanitary and Quarantine Board of Egypt, has been appointed C.M.G., and the Military O.B.E. has been received by Surgeon-Commander J. S. Dudding, R.N., and Major John Scott, D.S.O., I.M.S. In the Civil Division of the Order of the British Empire Dr. D. M. Cassidy, the medical superintendent of the Lancaster Mental Hospital, Dr. G. P. Bate, who has rendered service to the Home Office under the Factory Acts, and Major A. J. H. Russell, I.M.S., director of public health in Madras, receive the C.B.E. Lieut.-Colonel R. P. Wilson and Lieut.-Colonel C. A. F. Hingston, both of the Indian Medical Service, receive the C.I.E.; the former is officiating Surgeon-General to the Government of Bengal, and the latter is superintendent of the Government Hospital for Women and Children at Madras. The following received the Kaisar-i-Hind Medal of the first class: Dr. Esther G. Bare, of the Clara Swain Methodist Episcopal Mission Hospital at Bareilly, and Dr. Edith L. Young, in charge of the Palwal Mission Dispensary, Gurgaon District, Punjab.

To all of these we tender congratulations on the State recognition of their good work.

OPTICAL TREATMENT OF CONVERGENT SQUINT.

IN a paper read at the last meeting of the Oxford Ophthalmological Congress,[1] Dr. Ernest Thomson submits that there are three distinct categories of people who still require education in the importance of this subject—namely, the parent, the family doctor, and the school-teacher. What is wrong with the family doctor, he asks, who so often minimises the necessity for attending to a squint, tells the parent it will come right in time, and so on? If it is true that such family doctors are many, the answer is that what is wrong is a defect in what ought to be an essential part of their medical training. So far as the deformity is concerned, a squint in a young child will tend to cure itself in the majority of cases with time, but only too probably at the expense of the loss of useful vision in the squinting eye. Perhaps there has been an excuse for the family doctor in the past—namely, that there has been a school of ophthalmologists who have doubted the existence of the condition known as "amblyopia ex anopsia." It is perfectly true that there are cases where a squinting eye has defective vision, not because it squints but for some antecedent cause, such as corneal nebula. In such a case the squint may be more a consequence than a cause of the amblyopia. On the other hand, in cases of recent monocular squint associated with ametropia, it is the general experience of all engaged in eye work that the enforced use of the squinting eye after appropriate optical correction, if undertaken at a sufficiently early age, does prevent it from becoming amblyopic. Dr. Thomson supports this by a reference to the observations of Prof. Arthur Thomson on cave fishes and cave salamanders. The young stages of these cave animals, it seems, sometimes have eyes showing much less retrogression than in the adults. In the case of the human eye it is not suggested that there is any change in structure resulting from disuse. What Dr. Ernest Thomson suggests is that true amblyopia ex anopsia may result from the persistence of blurred vision caused by uncorrected ametropia. The latter tends to pass into the former after a certain lapse of time through true loss of function of the cerebral centres. This implies the necessity of providing young children with spectacles not only as soon as they have developed a squint—this is generally acknowledged—but even before, in cases where there are such considerable degrees of hypermetropia or astigmatism as would render the vision of the child's eyes—one or both of them—blurred.

[1] Trans. Ophthalmological Society, 1924.

FATTY ACIDS AND CANCER.

THAT the cells of the lymphocytic order are concerned in resisting the spread of cancerous growths has long been recognised. The accumulation of these cells in the tissues around the invading edge of a malignant growth is so characteristic that it is one of the features usually noted by the pathologist in weighing the evidence for and against malignancy. Up to the present few efforts have been made to modify the spread of cancerous processes by the stimulation of a lymphocytic reaction in the tissues, partly no doubt because until comparatively recently no agent certainly capable of producing such a reaction has been identified. In 1919, Bergel[1] demonstrated that the parenteral injection of certain fatty oils produced such a reaction, and lately Nakahara,[2] working at the Rockefeller Institute, has used this fact as the starting point of an experimental investigation into the effect of the injection of fatty acids upon the growth of implanted cancerous tumours in mice. This observer found that by the use of olive-oil injections he was able to produce a general stimulation of the lymphoid tissues; in his investigations into the inhibition of cancerous growth, however, not the oil but oleic acid and solium oleate were used. By the injection of small amounts of either of these substances it was found possible to produce profound modifications in the behaviour of implanted tumours. When implantation of the tumours was preceded by the injections the proportion of grafts which took was, in the case of the oleate, 50 per cent. and, in the case of the acid, 40 per cent., as against 90 per cent. and 80 per cent. respectively in the case of untreated controls. Where the injections were made after the implantation of the cancerous growths it was found that subsequent injection either of oleate or acid made little difference to the actual proportion of "takes." Even in this instance, however, the course of growth of the implanted tumours was considerably modified. They

[1] Bergel, S.: Berl. Klin. Woch., 1919, lvi., 915.
[2] Nakahara, Waro: Studies from Rockefeller Institute for Medical Research, Reprints lii., 1925, 95.

increased less rapidly in size than in the controls, and in section after removal the tissues surrounding them were found to show an intense lymphocytic reaction. Experiments with sodium palmitate and stearate showed that both these soaps were practically without effect either in producing a lymphocytic reaction or modifying the course of implantations. Linoleic and linolenic acids were, however, found to be almost as active in both these respects as oleic. Whether, as the above findings suggest, the activity of the fatty acids in promoting a lymphocytic reaction is a function of their degree of desaturation remains to be proved. The author, however, points out that cod-liver oil, which has a very high iodine value, is quite impotent in this respect.

The therapeutic implications of these observations are obvious. The recent observation of Murray[3] that experimental secondary implants of a tumour will not grow in the presence of a primary is correlated on the clinical side by the fact that removal of a primary growth is only too often followed by the appearance of a crop of secondaries. It is almost a platitude among general practitioners that patients who bear with their cancerous breasts live longer than those who have them removed, though the last state of such patients is such as to render the extra few months of life a doubtful boon. Taking into consideration both experimental and clinical findings, it would seem probable that the seeds of the secondaries are sown long before the removal of the primary tumour. Such removal, however, withdraws the inhibition upon their development. Some agent capable of stifling the seeds before they had a chance to develop would probably greatly improve the after-results of surgical interference in cancerous eventions. The experimental observations recorded above are correlated on the clinical side by the work of Shaw-Mackenzie,[4] who long ago recommended the use of sodium oleate in inoperable cancer cases.

THE CASSEL HOSPITAL FOR FUNCTIONAL NERVOUS DISORDERS.

ONE result of the striking alteration in recent years of the attitude of the public towards minor forms of mental aberration is a discrepancy between the supply of competent medical care and adequate institutional accommodation on the one hand and the number of patients willing and anxious to submit their condition to mental hospital routine on the other. While the prejudice against the "mental hospital" proper is slowly but surely disappearing, those newly established institutions which deal solely with the mild case are always full. The waiting list of the Cassel Hospital is of such a length as to block admissions for periods of from six weeks to three months. In some cases the mental state is not materially affected by delay in treatment; in others there is some deterioration which should at all costs be avoided, while in all there is detriment to the national health and efficiency, since many of these patients might be doing useful work if their psychological difficulty were adjusted. One way of reducing the discrepancy is to ensure such accurate diagnosis that beds which are especially equipped for the functional nerve case shall not be occupied by sufferers who do not come into that category. To assist in this direction Dr. T. A. Ross, the medical director of the Cassel Hospital, in his third annual report, has analysed the cases of organic disease admitted during the year with special reference to the differential diagnosis. While the general practitioner cannot be expected to recognise the morbid symptoms of every disease he should be competent to ascertain whether the signs presented by the various organs are those of health or not, and a really reliable sifting of cases by their doctors would save much time and money in specialist institutions. In distinguishing organic disease of the nervous system Dr. Ross places reliance on the four cardinal groups: pupillary changes, disordered reflexes, the presence of trophic lesions, and bladder trouble. He proposes to deal with some similar problem of diagnosis in each subsequent report and his special experience should be of much value in this direction. Of the 144 patients considered in this report 98 belonged to the psycho-neurotic group, and of these 62 are recorded as well or much improved, a figure on which the management are to be congratulated. As in previous issues, the patients are only reported on when at least one year of after-history is available, so that the present pamphlet deals with those who were discharged before December, 1923. There is also a table showing the late results in cases discharged from the hospital during the earlier years; the majority of these are continuing well. The patients are classed in broad diagnostic groups: psycho-neuroses, drug addictions, psychoses, and organic diseases, and there is a courageous discussion of those who failed to improve and the reasons for this failure. The functional nerve case is perhaps the most difficult of all those problems which confront the modern physician; with every year it seems to multiply in variety and increase in complexity. It is only by the patient accumulation of observations and statistics that the investigators can hope to see the condition adequately pigeon-holed in the near future. These observations must essentially be made in smaller institutions where every case can be weighed individually; while much excellent curative work is done in the larger mental hospitals it is not possible for the medical superintendent of several hundreds of patients, psychotic and functional, incurable and temporary, to conduct an adequate research into his minor cases. It is to the smaller specialised institutions such as the Cassel Hospital that we look for pioneer work in the exploration of this vital national problem. Dr. Ross and his assistants are well aware of the opportunity which they have and are competent to use it.

MEDICAL SERVICES AT THE WEMBLEY EXHIBITION.

WHEN the British Empire Exhibition was first opened in 1924 we gave a full account[1] of the elaborate medical and sanitary services which had been provided, and commented on the opportunity which was there offered to the public of seeing how its health and well-being were cared for—in place where it might least expect such an adjunct to safety and convenience. The health problem, as we pointed out, was not alone that of large transitory congregations of visitors, but also concerned a very considerable permanent population in the park largely unused to Western ideas of sanitation. It may be placed to the credit of the Exhibition authorities that the medical equipment for 1924 was slightly in excess of the public's requirements—surely an unusual record for a great undertaking of this nature. This year the medical services are organised on similar lines to those of last year, modified only by the abolition of one ambulance station and three first-aid cabinets, which experience showed were superfluous.

The medical staff at the Exhibition consists of the following officers: General Sir W. W. O. Beveridge, Director of Medical Services; Colonel Douglas Lawson, senior medical officer; and Dr. C. E. Goddard, medical officer of health. We are indebted to the director and the senior medical officer for the details of the medical services this year. The ambulance and first-aid stations now in use are: (1) The main ambulance station situated behind Australia near the south-west entrance of the Exhibition. (2) A small ambulance station fitted with men's and women's first-aid rooms, situated in the north of the grounds and near the amusements park. (3) Seven first-aid cabinets scattered in suitable positions about the grounds and the palaces. (4) An ambulance station in the stadium.

The headquarters of the Order of St. John of Jerusalem and the British Red Cross Society are

[3] Murray, J.: Eighth Sci. Rep. Imp. Canc. Res. Fund, 1923
[4] Shaw-Mackenzie, J.: Internat. Cong. Med., London, 1913 (Therap. Sect.).

[1] THE LANCET, 1924, i., 1127.

situated in a large hut which has been placed at their disposal by Messrs. Main and Co. near the Civic Hall and the main ambulance station. The detachments coming on duty, usually for a week, are drawn from all over the country, and the societies take turn month and month about to carry out first-aid duties. During big days the detachments doing duty are supplemented by extra V.A.D. nurses and orderlies. Each member receives a small honorarium to help to pay out-of-pocket expenses. The two societies have made themselves responsible for the supply of drugs, dressings, and appliances.

All the ambulance stations and the first-aid cabinets are in telephonic communication with the main station, from which a motor ambulance can be obtained to remove a case to the main station where a medical officer is always on duty. The main station is fitted with a men's ward and a women's ward each containing six beds and a special ward containing one bed, also two dressing rooms and a dispensary. The permanent staff at this station comprises a senior medical officer, an assistant medical officer, two dispensers, and two trained nurses, one of whom acts as matron. This staff is supplemented by two V.A.D. nurses and two orderlies of the society doing duty for the month. The main ambulance station deals with accidents and illnesses of all kinds, and any found to require hospital treatment are transferred to Willesden General Hospital or other suitable hospitals. Some cases are transferred to nursing homes or to the patient's own home. No cases are kept overnight, but visitors with such things as gastric catarrh, overstrain, sprains, or contusions may be detained for some hours. These and other cases are frequently assisted on their way home by motor ambulance to railway or bus stations. The other ambulance stations and first-aid cabinets are all staffed by nurses and orderlies of the societies. There are two motor ambulances and a small four-seater touring car, all supplied by the societies, which are kept in a garage adjoining the main ambulance station. One ambulance is always in the Exhibition, whilst the other may be used to convey patients to their homes. Patients, if able, pay for the use of the ambulance. Others pay part or travel free according to their financial position.

Dr. Goddard is responsible for the sanitation of the Exhibition. Daily inspections of the buildings, restaurants, conveniences, grounds, and native quarters are made by three sanitary inspectors, two men and one woman, who report to the local urban authority.

THE ACTION OF EFFERVESCENT BATHS.

IT is well known that many waters, resorted to both for drinking and bathing, contain in the fresh state a variety of gases, although as a rule their therapeutic effect is not attributed to their gaseous contents. At Buxton, for example, besides other gases, the waters contain large volumes of nitrogen and carbonic acid. These gases adhere to the body of the bather, and they are freely inhaled. What is their effect? It must be confessed that the modus operandi of what may be called semi-gaseous and effervescent baths, whether natural or artificial, is still far from being understood. They have, however, certain noteworthy features. Thus in these baths, given below blood heat, not one but two thermal actions take place upon the surface of the body, due respectively to the relatively cool water and the relatively warm gases. Again, a remarkably consistent clinical experience has shown that effervescent baths at suitable temperatures affect the frequency of the pulse, the cutaneous circulation, and the arterial blood pressure, these immediate effects being followed by others more remote. Recent work at Spa and St. Moritz [1] have helped to define the indications for this form of balneotherapy. Dr. Hediger suggests that the effervescent bath, properly given in cases of myocardial weakness, acts by training the heart and gradually increasing the force of its contractions. At the same time it slows the cardiac rhythm, a result favourable to the nutrition of the myocardium. In his view it is a form of training accompanied by slowing of the pulse. All these and other observers agree that a definite sedative effect is also produced by the bath, and a reduction of peripheral resistance, by the opening up of the cutaneous circulation. According to Dr. Hediger, the results point to a specific action of carbonic acid gas upon the vasomotor nervous system.

We have received some interesting and suggestive observations from Dr. Karl Barth, who for nearly 20 years has studied the action of natural carbonic acid baths at Kislowodsk in a valley of the Caucasus, and afterwards at Nauheim. An old saying runs that the flowers at Kislowodsk are without scent, the birds without song, and the people without souls. Dr. Barth finds some truth in this tradition, and at Nauheim also, and especially notes that many persons, who feel quite well on the higher slopes, are tired and depressed near the springs. Sensitive, anæmic, and debilitated subjects, brain workers and women, are generally affected by the atmosphere near these waters. In his experience a certain number of the cardiac cases referred to both these spas derive most benefit from the air alone, which he regards as the first grade of a "carbonic acid treatment." With reference to the carbonic acid content of the atmosphere, wider differences exist than is generally supposed. The monthly weather reports showed many years ago that the proportion of this gas in the air of the London streets was sometimes three or four times as high on a working day as on a bank holiday. Lundegårdh has recently stated [2] that green plants are stimulated to increased growth by an increase of carbonic acid up to a point, but that a proportion of about 1 per cent. becomes in many cases inhibitory. Following the analysis of gases contained in waters, made by Prof. Schmidt, of Dorpat, Barth suggests that possibly a mixture of other gases, especially of nitrous oxide, in minute and continuous doses, may be concerned with the effects of these local climates and baths. In any case, he believes that the cure of cardiac cases in these localities is a combined one, and that effervescent baths alter or increase a special action of the atmosphere. In modern times gases have been used in deadly doses. May not continuous dosage with minute quantities of various gases have a therapeutic effect? From the scientific standpoint the action of effervescent baths ought, according to Dr. Barth, to be regarded as a graduated stimulation of organs or tissues, producing certain reactions. Even minute stimuli, below the threshold value, may affect the sum of the tensions in living protoplasm, and so increase the store of potential energy in the body. The stimulus of the effervescent bath especially affects the circulatory apparatus and its potential energy. Other organs and other forms of disease—e.g., tuberculosis—are adversely affected by the same stimuli.

All the authorities above quoted agree that myocardial weakness which has resisted other forms of treatment may respond favourably to effervescent baths. The first effect may be a diminished vigour, and only a heart with reserve power ought to be treated in this way. The result of treatment is usually manifested after an interval of months. The effervescent bath, according to these views, places a keyboard of stimuli at the disposal of the practitioner. Laboratory proofs will, no doubt, in time substantiate the clinical findings. In the meantime, it is to be recognised that cardio-vascular baths, like all other forms of physical treatment, should be adjusted to each individual case rather than dosed. Definite indications for such media cannot be attached to

[1] Archives of Medical Hydrology: No. 1, May, 1922: R. Wybauw: The Treatment of Circulatory Trouble by Natural Effervescent Baths, No. 5, May, 1924; Em. Guilleaume: Natural Effervescent Baths in the Treatment of Angina Pectoris, No. 3, June, 1923; Stephan Hediger: Recent Researches on Natural Carbonic Acid Baths.

[2] Der Kreislauf der Kohlensäure in der Natur, 1924.

diseases or even to functional disturbance, but only to individuals and by the study of individual reactions. It is obvious that more extensive clinical research and analysis of cases submitted to treatment of this kind at the health resorts, particularly at the spa hospitals, with graphic records during and after treatment, are much to be desired. Thousands of cardiac invalids resort to spas for relief of their symptoms, often on their own initiative, or because friends have derived benefit, and no branch of spa treatment is more deserving of attentive study. It would appear that the addition of salt in the water hastens the vaso-dilator effect. The action of carbonic acid gas and of other gases in baths upon the circulatory system is still an unsolved and interesting problem. It is not yet clear whether natural and artificial effervescent baths act in the same manner.

THE HUMAN MACHINE.

DEPRESSION is to-day the ruling factor in British industry. The remedy is held to lie in lessening costs of production, to which wages contribute the most important item. Workers need wages to maintain their well-being, and, in proportion as working hours are spent under unfavourable conditions, they need more wages to enable them outside working hours to re-establish the equilibrium of health. A question arises as to whether improvement in working conditions, carried out for the personnel as a whole, would not maintain well-being more surely and more economically than leaving it to each individual worker. Moreover, maximum production is contingent upon maximum fitness; hence, whatever conduces to fitness benefits the employer no less than the worker. The whole question turns on the importance of the human factor in relation to production. Study of the human factor is the function of the Industrial Fatigue Research Board whose fifth annual report [1] has just been published. Thirty reports dealing with special investigations have already been published by the Board and definite laws governing human activity are emerging. Nevertheless, we note with regret that British industries are reported as failing to avail themselves of the new knowledge, even though it offers a sure way of mitigating trade depression and is being adopted in other countries.

The rest of the Board's activities is far cast and includes problems of wide industrial importance, such as hours of work, accident causation, design of machinery, ventilation, and speed of learning; specific problems, such as sickness in cotton-weaving, weight-lifting, telegraphists' cramp, illumination for printing, atmospheric conditions in mines, and employment of women as pottery placers; and laboratory research into the laws of muscular exercise, weight carrying, physical fitness, vocational selection, accuracy of movement, repetitive work, and muscular skill. The value of these investigations is hard to over-estimate; much is carried out by scientific and professional men as a free gift of knowledge for a national end. Throughout its work the Board interlocks with the activities of the National Institute of Industrial Psychology which concerns itself with specific problems for separate firms. Solution of such problems brings immediate financial return to the firms and cannot therefore be undertaken from public funds, even though based on fundamental principles elucidated with their help. Practical application may throw new light on the general problem. The Institute is an organisation in full working order prepared to translate for the benefit of individual employers the advances which have been made in understanding that internal combustion machine—the human body.

The report contains several interesting personal contributions from investigators. Perhaps the first, by Mr. S. Wyatt, will attract most attention. He shows by diagram how the productivity of beginners, even at the simplest processes, increases week by week, how it varies with different types of work and of worker; for the best workers the rate of output increases rapidly and attains a high level, for the worst the rate of increase is much slower and output never attains a high level. Slow starters should at an early stage be transferred to some process for which they are better fitted and be replaced by quick starters. Miss May Smith exhibits how mental states are reflected by exceptional work curves; the nervous and neurasthenic have an exceptional mental make-up and react accordingly. They have also much sick leave, headaches, and irritability. The work curve as a method of diagnosis may be of great value. The question is discussed by Mr. E. Farmer as to whether that tendency or predisposition to sustain accidents which is now accepted to exist can be detected beforehand; he optimistically concludes there is already evidence that this can be done by properly devised tests. The importance of such a line of research is clear. Dr. H. M. Vernon discusses the significance of output as a measure of efficiency; he considers it of great value and concludes that to-day there is practically no overstrain in industry. Mr. H. C. Weston puts in a plea for giving weight to personal subjective feelings, which may go far to check deductions drawn from other sources of information. An excellent and well put together article by Miss E. M. Newbold deals with the long vexed question of how to cope with industrial sickness statistics. The author presents the wellnigh insuperable obstacles in the way of collecting comparable data, and the pitfalls awaiting the enthusiastic tyro. He who takes this way has truly a rough road to ride.

[1] Fifth Annual Report of the Industrial Fatigue Research Board. H.M. Stationery Office. 1925. Pp. 76. 1s. 9d.

REAPPEARANCE OF GERLIER'S DISEASE.

IN the *Schweizerische medizinische Wochenschrift* for May 7th Dr. Karl Rehsteiner, of Zürich, describes a small epidemic of Gerlier's disease which he observed in the autumn of 1924. As many as seven of the eight persons living in two houses showed the characteristic signs of this disease which, according to Dr. Rehsteiner, has not been noticed in Europe since 1900. Its history is of some interest. In 1887 Gerlier, of Switzerland, described a condition which he had first observed in the summers of 1885 and 1886, although he had been in practice in the locality for 20 years. He called it *vertige paralysant*, and the triad which he considered the most characteristic of the manifestations of this disease were: (1) pareses of certain muscles; (2) giddiness and disturbances of vision; and (3) pain in the nape of the neck and back. This disease has been known since 1888 in Northern Japan as *kubisagari* (hanging of the head), for in some cases the muscles of the nape of the neck are so weak that the chin rests on the chest. The levator palpebræ superioris is nearly always involved, and the resultant ptosis is so complete that the patient has to lift an eyelid with a finger in order to see. The extensors of the arms and legs may also be temporarily paralysed, and the combination of paralysis of the extensors of the legs with giddiness is apt to suggest drunkenness. During an attack the patient complains of misty vision and sometimes of diplopia. It is characteristic of the disease that an attack usually lasts only a few minutes, and it is this transitory character which distinguishes it from certain other diseases, such as myasthenia pseudoparalytica and lethargic encephalitis. The disease begins, as a rule, in the summer, the attacks becoming more frequent and severe until half a score to a score occur every day and greatly interfere with the patient's work. They cease with the beginning of colder weather, and have never been known to be fatal. Indeed, in the intervals between the attacks the patient feels perfectly well. Investigations conducted in Japan suggest that there is a certain connexion between working in a stable and the development of this disease, and it has been observed that transmission of the disease from one person to another does not occur (except in the case of mothers suckling their infants), as persons who

do not live in stables, but who consort intimately with stablemen suffering from the disease, do not contract it. In 1914 a Frenchman, Couchoud, working in Japan, cultivated a small Gram-negative coccus from the cerebro-spinal fluid and milk of patients, and the subcutaneous injection of cultures of this coccus into cats caused paralyses similar to those observed in man, the attacks of paralysis ceasing after a few days, and the cats recovering completely. Now that Gerlier's disease has reappeared in Europe, and attention has been drawn to its most characteristic features, further research will doubtless be undertaken, and new light thrown on a condition which has probably often been overlooked or mistaken for hysteria—that cloak under which so many morbid conditions have been hidden in the past.

CANCER AND THE NERVOUS SYSTEM.

IN discussing recently in these columns (May 2nd) the anatomical distribution of occupational cancers, the suggestion was made that the factor of innervation might account for the predisposition of definite anatomical sites in the incidence of different types of occupational cancers. From an article by Dr. J. Thomas in the *Vie Médicale* of Feb. 13th, it appears that the relation of the nervous system to the ætiology of cancer has been the subject of a recent monograph entitled Précancer, by Prof. C. Stajano, of Montevideo. The article of Dr. Thomas from which we quote is a review of this monograph. Prof. Stajano holds that a peripheral traumatism must necessarily react through the peripheral nerve-endings on the cells of the central nervous system, and it is this latter change which is reflected peripherally and manifests itself in the traumatised tissue. Thus, according to Stajano, the epithelial dystrophy of lingual leukoplakia establishes itself as a response of a trophic nerve-centre, the functions of which have been disturbed by an irritating agent, such as a carious tooth. In that sense every lingual leukoplakia has a nervous origin, whether it is produced by a peripheral traumatism or by the effect of such a disease as syphilis on the nerve-cells. Stajano further holds that cancer affects particularly those sites or organs which are most highly innervated. He points out that cancer arises much less frequently on a duodenal ulcer than on a gastric ulcer, and relates this fact to differences in the degree of innervation. These interesting observations are in accord with the scanty data existing in the literature concerning the relation of the nervous system to cancer. In 1907 Sir Lenthal Cheatle[1] described in two cases of cutaneous cancer inflammatory changes in the posterior root ganglia corresponding to the area of affected skin. There are also on record two cases of cancer in man developing with extraordinary rapidity as a result of a local traumatism. In Bang's[2] case an epithelioma developed a fortnight after a drop of hot tar had fallen on the skin just within the nostril. In Story's case an epithelioma had developed within four months after the conjunctiva had been traumatised by a splash of crude carbolic. Both these regions are, of course, distinguished by being sensitive to nervous stimulation. As a result of his studies Prof. Stajano holds that—

"the part played by syphilis and by tuberculosis in the origin of precancerous dystrophies consists in the fibrotic and destructive action on the nervous system which is common to them. . . . Traumatism in general, and chronic ulceration in particular, cease to be local accidents, and must be considered as far-reaching lesions passing beyond the bounds of the organs or regions and influencing their whole regional nervous system. . . . Carcinoma becomes a syndrome of a dystrophic nature closely related to a preceding state—the precancerous lesion—the ætiology and pathogenesis of which have their foundation in the study of the ætiology and pathogenesis of the original nervous disturbance."

Prof. Stajano's conclusions are interesting but highly speculative.

[1] Brit. Med. Jour., 1907, ii., 140.
[2] Trans. Acad. Med. in Irel., 1885, iii., 322

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

CXXV.

THE TREATMENT OF DEMENTIA PRÆCOX.

2. THE MANAGEMENT OF A CASE.

HAVING gleaned all that he can from the parents and friends, the doctor is prepared to examine the patient himself.

Early Cases.

It may happen that sensible parents or relatives bring the patient to the notice of the physician before evident mental disturbances have arisen. The patient may be found to be mildly excited with a certain degree of incoherence of thought and a general childish demeanour and reaction, or the picture may be one of emotional apathy and resistiveness with reticence. In the former case no good can be done by any attempt at psychological investigation; the treatment must be carried out on the general lines indicated below, modified to suit the requirements. Where there are depression and apathy, however, much can be done by a painstaking effort to obtain the confidence of the patient. Very often it will be found that the apathy is more apparent than real and that the reticence is deliberately adopted rather than indicative of lack of thought process. A dramatic change in the situation can be brought about in many such instances by patience, goodwill, and a real heartfelt attempt to understand the difficulties which the patient is experiencing. An acquaintance with human nature and a sympathetic understanding are worth more in dealing with such a situation than all the scientific technique of the schools. The physician must guard against showing any surprise or emotional revolt at any of the facts which may be confided to him. Very often it transpires that the girl or boy is suffering from a serious loss of self-esteem due to some unconventional behaviour. With this feeling of inferiority there goes a sense of estrangement, of being cut off from social contact, and the attitude of the relatives is often interpreted in this light. It is surprising how completely the whole outlook of the patient may change when once he or she discovers that this secret and carefully hidden difficulty can be freely and naturally discussed with the doctor. Without betraying the confidence of the patient, the physician can often effect some readjustment of the family life or of the environmental situation and so relieve the stress of circumstance. One interview may not be, and often is not, enough to clear up the matter. It may be necessary to stop any active work, even to institute a definite sick routine for a month or six weeks. According to the response to treatment manifested greater latitude may then be allowed and the patient may be sent away for a change before taking up his life again under such circumstances as are indicated. It is unwise in these acute adolescent disturbances to permit of any systematic psychological investigation; analysis in the Freudian sense has, in the experience of most psychiatrists, been productive of more harm than good and it is certainly unnecessary.

It is desirable to relieve the acuity of perceptional life by the administration of bromides, and the following prescription may be used for a period of six months or even longer with advantage:—

℞	Ammon. Brom.	gr. x.
	Liq. Arsenic.	℥ ii.
	Sp. Ammon. Arom. ..	℥ v.
	Aq. Chlorof.	ad ℥ j.

Sig.: ℥ j. t.d.s., p.c.

Although there is no definite knowledge in regard to specific endocrine disturbances, yet any indication of

failure or of hyperactivity of one or other of the organs of internal secretion should be noted and appropriate treatment adopted. The empirical use of compound glandular extracts is often of value; the "Elixir polyglandin," in drachm doses three times a day, may be given in this way over a period of months. Iron and strychnine should be used with care in the early stages of the treatment, but are useful adjuncts during the convalescence.

More Advanced Cases.

Where there is evident mental disturbance of a pathological nature there is no doubt of the condition, and the line of treatment to be adopted will depend upon the severity and nature of the disturbance of conduct and upon the circumstances of the relatives. The age of the patient has also a bearing on the case, because much can be done to manage the younger patient at home, whereas, for the safety of everyone concerned, the older boy or girl may have to be placed under certificate and treated in an institution. If it is decided to treat the patient away from home it is far wiser to place him in a recognised mental institution. The ordinary general nursing home does not provide the right atmosphere and much valuable time may be lost before the case is brought under the care of those who have a proper understanding of the condition. The practitioner must not forget that it is illegal to treat a certifiable patient in any nursing home other than one of those licensed by the Board of Control.

Home Treatment.

If the case is to be treated at home it is always advisable to insist on a specially trained nurse; the relatives are not to be relied on and the general nurse does not appreciate the points against which to guard. The difficulties generally encountered are impulsive behaviour or suicidal tendencies, excitement and noise, stupor and refusal of food. The treatment should be carried out in a well-ventilated room on the ground floor, having easy access to a garden, which preferably should not be overlooked, so that the patient can take exercise when desirable and so that his bed can be placed in the fresh air when the weather is suitable. It is wise to aim at keeping him in bed for at least a month or six weeks; the causal factor is exhaustion, and all expenditure of energy should be cut down to a minimum. Where there is marked restlessness with tendencies to destructiveness it is advisable to put a mattress on the floor and nurse the patient without a bedstead at all. Where he is inclined to tear up sheets and to strip himself, as is so frequently the case, he may be dressed in a strong and warmly-lined combination suiting of canvas or some untearable material and so protected from the effects of exposure. Where there is excitement with motor restlessness or depression with suicidal tendencies the room should be cleared of all breakable objects which might form sharp-edged instruments for self-mutilation. He should be kept on sloppy foods which do not demand the use of a knife and fork; a spoon is a far less dangerous implement in the hands of an impulsive patient. Emotional instability with marked depression is a sign of considerable gravity because of the liability to impulsive suicide. In such a case continuous observation is absolutely necessary and for this two or even three nurses may be required. The noisy case must be nursed in an isolated house or he will be a nuisance to neighbours. It is not correct treatment to restrain a patient mechanically or to keep him quiet by the use of strong sedatives.

Diet and Drugs.

The diet should be plentiful and contain an excess of fat in the form of butter and cream. Care must be taken to see that a sufficiency of fresh fruit and other vitamin-containing substances is included. Where the patient refuses food or is stuporous a competent mental nurse is of great assistance, but resort should be made to tube-feeding if there is any suspicion that the patient is not getting an adequate amount of nourishment; if matters are allowed to drag on, a point is reached when he seems incapable of digesting or assimilating and serious physical consequences may ensue. Feeds should be given three times in the day and should not fall below a diurnal minimum of four pints of milk, three eggs, three ounces of cream, four ounces of sugar, and the juice of an orange or lemon or whatever fruit may be available. The milk may be given in the form of custards or one of the prepared foods. A vegetable soup makes a good variant in the dietary. Any medicines, such as aperients, may be dissolved in the feed and so given at the same time. Careful attention should be paid to the bowels and to the state of the mouth, which may become very dirty. Sedatives may be found necessary from time to time, especially where there are insomnia and excitement. The administration of paraldehyde in doses of from two to four drachms, given every six hours or night and morning, may be continued for some time without any harm to the patient. The use of the more toxic sedatives over any prolonged period is to be deprecated. Sulphonal, in doses of from 5 to 15 gr. once or twice daily, soneryl, which may be given up to 9 gr. throughout the day, and luminal, in 4 gr. doses at night, have all been found useful. When sulphonal is being administered the appearance of dark smoky urine, due to the elimination of hæmatoporphyrin, indicates that the drug is accumulating and exercising a deleterious toxic effect.

During the patient's rest in bed, massage and hydrotherapy will materially assist in keeping up the physical condition and in maintaining a healthy tone in the skin and muscular system. Prolonged hot baths, at a few degrees above blood-heat for five or six hours at a time, are sometimes of great benefit in controlling restlessness. If the patient should develop acute phases of excitement the hypodermic administration of a combination of morphine gr. ¼ and hyoscine gr. 1/100–1/50 will be found efficacious. Objections to the use of hyoscine, based upon complaints from patients of "feeling held in a vice," &c., should not be considered too seriously; in these conditions of excitement it is a valuable and useful drug.

The treatment will take time. Whereas the course of physical illnesses is usually measured in days or at most weeks, that of the mental illness is measured in months and possibly years, though it is unusual for an acute mental disturbance to persist longer than a year and a half. The relatives must be prepared for at least six months' continuous treatment, and they must be accustomed to the idea that no sign of progress may appear for many weeks. A change of phase is often indicative of response to treatment; the excited patient may become depressed, stupor may replace motor restlessness, confusion may alternate with clear periods, but eventually the more acute phenomena subside, the hallucinosis becomes less vivid and disturbing to the patient, impulses are less frequent and more easily controlled, and he shows a tendency to occupy himself more consistently and to take a normal interest in affairs around him. Care must be taken not to let him re-enter life too quickly, and he should be kept under supervision and prevented from taking up any social responsibilities for at least two months after all definitely morbid symptoms have disappeared.

It will be seen that the treatment of the mental patient at home is not to be lightly undertaken, and unless conditions are very favourable it is usually better for him to be dealt with in an institution. The practitioner must exercise his discretion and judge each case on its merits, but no time should be lost in getting the patient under proper control when the symptoms are as gross as those described above.

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Special Articles.

THE MILK-SUPPLY AND ITS IMPROVEMENT.

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II.*—INADEQUACY OF THE PRESENT LEGAL POWERS DEALING WITH MILK.

IT is of importance to determine whether the present unsatisfactory condition of the milk-supply is due to insufficient legal control, to the ineptitude of local authorities and failure to use their existing powers, or to factors uninfluenced by statutory regulations and enactments. There exist upon the statute book and in regulations made under different laws a considerable quantity of legislation.

The Present Statutory Powers.

The latest Act is the Milk and Dairies (Amendment) Act, 1922. Its most noticeable feature is that while it added materially to the control exercisable over purveyors of milk it did nothing to tighten the control over milk producers. The official reason for this singular omission was that the existing legal enactments were adequate for this purpose and it was merely a question of their enforcement. To quote the circular of the Ministry:—

> The Minister desires to take this opportunity of drawing the attention of sanitary authorities to the very wide powers which they already possess for the sanitary control of dairies and cowsheds under the existing Dairies, Cowsheds, and Milkshops Orders of 1885, 1886, and 1899, and the detailed regulations which have been made by most authorities under the first of these Orders. It seems to the Minister that by the careful and systematic exercise of existing powers, together with the additional powers conferred under the new Act, local authorities should be able to take all necessary steps for the protection of the milk-supply from contamination.

It is desirable to examine with some care the reliability of this official optimism.

The efficiency of the present powers involves two separate propositions. Is the enforcement of the powers entrusted to authorities who are likely to carry them out? If it be granted that there exists the utmost willingness to operate these powers, are the legal enactments so framed that effective control is possible?

As regards the first proposition it is recognised, by those in a position to pass judgment, that the heaviest contamination and that likely to be most detrimental is at the place of production of the milk, so for practical purposes we have to consider in the main the control over clean and pure milk *production*.

These powers are exercised by the local sanitary authorities and, since the vast bulk of milk is produced in the rural areas, almost entirely by the rural sanitary authorities. We are all aware that these powers, for the most part, are administered in a very lukewarm fashion and for three obvious reasons.

(*a*) These councils are composed almost entirely of farmers or of persons directly in business relationship to farmers and milk producers. By nature and training they find it difficult to realise that conditions which they have been accustomed to all their lives may be profoundly unsatisfactory, and it is asking a lot of human nature to expect them to be zealous in public health reforms which may intimately affect their pockets.

(*b*) The officers of the local authorities who have to carry out the milk regulations are appointed by these rural district councils, and zeal in milk reform is frequently no recommendation to advancement in position or salary. Rarely or never are there enough inspectors to make it possible for them to carry out their duties efficiently under the Milk Orders and Regulations.

In the county of Somerset there are between 4700 and 5000 milk producers and the work of inspection is in the hands of 19 inspectors, all but one of whom are the sanitary inspectors of their districts, with an average of 991,700 acres and with other duties more than sufficient to keep them fully occupied.

(*c*) The vast bulk of the milk produced in rural districts is not consumed in them, but is sent to urban areas. The clean and the dirty milk fetches the same price, and efficient control adds nothing to the health or economic position of the rural areas.

All cognizant of these facts know that these factors affect materially the degree and quality of the supervision exercised over milk production.

The second question is, assuming efficient administration, can the existing legal powers ensure clean pure milk. Practically all the essential powers of control are contained in the Dairies, Cowsheds and Milkshops Order of 1885 and the Regulations made under them, the 1899 Order, the Milk and Dairies (Amendment) Act, 1922, and a few powers in regard to milk scattered through different Public Health Acts. It is impracticable in the space available to consider these in detail and only their general effect can be discussed.

Inadequacy of Existing Powers.

As regards the conveyance, with milk as the vehicle, of specific infectious diseases such as tuberculosis, streptococcal sore throats, diphtheria, typhoid fever, &c., it is notorious that existing powers are inadequate, and this is true whether the disease is spread from an infective animal or from a human case or carrier. Almost all the sections have attached to them "safeguards" to protect the milk industry which largely nullify the scanty powers which they provide. Two examples may be given.

Section 9 of the 1905 Order makes it unlawful for persons who deal in or handle milk to take any part in the business if they suffer from a dangerous infectious disorder or have been in contact with a person so suffering. It only operates when there is definite knowledge on the part of the milk producer or trader, and does not affect the cases where the diagnosis is still in doubt. The harm is frequently done by the time the disease is labelled a "dangerous infectious disorder," and only last August in Somerset, in an outbreak of eight cases of enteric fever, the father of the original sufferer continued to milk his cows and handle the milk right up to the day he took to his bed and was found himself to be suffering from the same disease. The child was ill in his house for several weeks, but no definite diagnosis was made until after the father was ill, so there was no offence under Section 9. There are no powers requiring notification of illness to the local authority from premises where milk is handled.

There are no adequate powers as regards milk from tuberculous animals. Section 5 of the 1922 Act makes it an offence to sell milk from a cow suffering from tuberculosis of the udder, but with the safeguard that the local authority has to prove that the owner "knew or could by the exercise of ordinary care have ascertained that the cow was suffering from that disease." The diagnosis of udder tuberculosis is notoriously difficult even to the skilled veterinary surgeon, while there appears to be nothing to prevent the cow keeper selling the cow, without disclosure of the facts, to another milk producer.

The local authorities might do something by the appointment of veterinary inspectors to inspect systematically cows and cowsheds. The appointment would have to be made by the individual rural and urban authorities. It is doubtful if county councils could make appointments for this purpose. The only county council appointment of this kind, of which I am aware, is in Scotland, and in the county of Lanark, by agreement with the local authorities, a whole-time

* Part I. appeared in THE LANCET of May 23rd and 30th, and Part III. will appear in a subsequent issue.

veterinary inspector was appointed in 1910 and this work has been continued since with the aid of a qualified veterinary assistant. The following figures from this county, for which I am indebted to Dr. J. H. Patterson (M.O.H.), are of considerable interest.

Year.	Number of cows inspected.	Numbers with udder tuberculosis.	Percentage with udder tuberculosis.
1910–11	31,003	37	0·119
1911–12	32,325	36	0·111
1912–13	31,938	36	0·112
1913–14	32,743	41	0·122
*1920	29,310	19	0·064
1921	33,786	31	0·091
1922	28,727	28	0·097
1923	28,174	30	0·106

* No inspections during the intervening war years.

While it is probable that some cases of udder tuberculosis are never seen by the inspectors, the percentage detected is only about one-tenth of the proportion (1 per cent.) which competent veterinary authorities give as the prevalence of udder tuberculosis in milking herds. This fact suggests that the systematic inspection in Lanark is responsible for a very marked decrease in the prevalence of udder tuberculosis in this county, and is a striking example of the value of systematic veterinary inspection.

As regards the production of clean milk, apart from possibilities of contamination with recognised pathogenic bacilli, the legal powers are even less satisfactory. They may be considered under equipment and under methods.

As regards equipment at the farm, while it is perfectly true that methods are far more important than equipment, and that the trained person can produce high quality milk upon premises exceedingly poorly equipped, it remains true that equipment is an important adjunct and greatly facilitates the application of sound methods. While the regulations are more comprehensive as regards equipment than when dealing with methods they are very unsatisfactory. No recent regulations have been made, and those in force show an almost perverse and wilful looseness of phraseology which makes it difficult to take legal action. There are no definite regulations as to an impervious floor in the cowshed (an essential), and the requirements as to light, ventilation, and water-supply are of the vaguest. The cowsheds have to be "sufficiently" lighted, "sufficiently" ventilated with a "sufficient" number of openings, the water-supply has to be "suitable and sufficient for all such purposes as may from time to time be reasonably necessary." The definition of that blessed word "sufficient," it has to be remembered, is in the hands of the rural district council, usually composed of, or controlled by, the milk-producing section of the community.

Defective Powers of Control of Milk Production.

When we come to methods of milk production it is rather farcical to suggest that there are adequate powers of control. The requirements for clean milk are in their essentials clean cows, clean milkers, clean sheds, clean milk vessels, and satisfactory arrangements to cool the milk. There are, for example, no powers to require (*a*) the approaches to the cowshed to be kept clean and free from manure to prevent fouling of the animals as they go to their sheds. (*b*) The udders of the cows to be washed or even wiped before milking, unless the producer sells milk by retail. (*c*) Hands to be washed (unless the producer retails the milk), or even facilities for washing the hands to be provided. (*d*) The milkers to wear overalls. (*e*) A water-supply to be provided adjacent to the cowsheds for washing the hands or for cleaning down the floor of the cowshed. (*f*) The milk to be cooled after milking.

No powers are available for collecting samples of milk at the place of production for bacteriological examination. About the only definite powers are in regard to the cleanliness of vessels, and these are couched in the typical loose phraseology such as that every milk vessel is to be thoroughly cleansed with steam or clean boiling water "as often as may be necessary."

The want of legal sanctions will be better appreciated when it is realised that the inspector may visit a cowshed at milking time and find therein manure-plastered cows with dirty udders being milked by a man in his ordinary clothes in which he has just come from muck-carting. The milker's hands may be unwashed and, if he is an advocate of wet milking, he can start his job by dipping his hands in the first few pulls of milk; he can sit on a filthy milking-stool from which he refouls his hands whenever he shifts to milk a fresh animal. He can milk in a shed filled with dust, from cows tossing about the hay they are eating, into an open pail which also receives fragments from the manure-covered flanks of the cow. The milk may be poured through a dirty strainer-cloth into a churn standing in the same dusty shed, and the filled churn may be left with the milk uncooled all night until delivered next morning. The inspector may stand by and watch all this being done, and I am unaware of any legal powers which he or his authority possess to stop a single one of these unhygienic practices. Yet we are told that "local authorities should be able to take all necessary steps for the protection of the milk-supply from contamination."

The nearest approach to powers to take action would be to seize the milk under Section 116 of the Public Health Act, 1875, as "diseased or unsound, or unwholesome, or unfit for the food of man," but one is doubtful whether this section could be used for this purpose, and I know of no instance in which it has been employed. A few prosecutions have been taken under the Sale of Food and Drugs Acts for excessive dirt in milk, but there are immense difficulties in using it for a case such as the above.

Defective Powers of Control of Distribution.

Legal powers for dealing with the milk after it leaves the producer are more efficient. The 1922 Milk Act gives extensive powers over purveyors of milk since it gives power to refuse registration or to remove from the register if conditions are unsatisfactory. There are, however, numerous lacunæ in the powers of control, and, for example, there are no powers to prevent the milk being sent by train in unlocked churns (much is so sent), transferring different lots of milk from churn to churn in the streets or a railway platform or other dusty place (frequently done), heating the milk to any temperature and selling it without disclosure that it has been heated (a regular practice), transferring from churns to bottles in the street, shipping the milk quite uncooled.

From the above brief summary it will be evident that the legal position as regards milk is profoundly unsatisfactory. As will be explained in a concluding article, the Milk and Dairies (Consolidation) Act, 1915, is on the statute-book but has never been put in force, but (unless again postponed) is due to come into operation in September, 1925. The need for this or some better Act is manifest.

As the concluding article will explain, the problem of a pure clean milk-supply can only in part be solved by more definite legal powers, but all authorities agree that administrative action and control are essential factors and must play an important part. There is so much discussion about milk and the control over it that it is possible that the medical profession as a whole has failed to realise that there has never been any legal endeavour to ensure efficient supervision over the methods of milk production. Public health workers have for years past pointed out this need, and after most careful discussion have elaborated essential requirements, but invariably influences other than those of public health have prevented the sanction of legal powers to ensure the provision of even a reasonably clean pure milk-supply.

The legal position in regard to the chemical composition of milk is also decidedly unsatisfactory. The regulations made by the Board of Agriculture in 1901 under Section 4 of the Sale of Food and Drugs Act, 1899, state that when a sample of milk contains less than 3 per cent. of milk-fat, or 8·5 per cent. of milk solids other than milk-fat, it shall be presumed, unless the contrary is proved, that the milk is not genuine, due to the abstraction of milk-fat or the addition of water. The average composition of milk is recognised to be well above these standards, but these low figures are fixed because the milk of individual cows, and even in special cases the milk from small herds, may fall below, and this avoids the possibility of injustice. Such a low standard, however, means that an enormous quantity of cream is abstracted and separately dealt with, an illegal procedure hardly detectable if the reduction does not fall below the 3 per cent. fat limit.

Difficulties arise in regard to a number of points such as the warranty clauses, but the main grounds of complaint are in regard to the interpretation of what is milk in relation to these standards. The appeal decision Hunt *v.* Richardson in 1916 was to the effect that even if the milk markedly infringed the above standards no offence was committed if the justices accepted the evidence of the defendant that the milk was as it came from the cow. A simple denial of tampering is frequently accepted as adequate for this purpose. The case of Grigg *v.* Smith in 1917 further confirmed this view, and emphasised that even if the farmer deliberately only partially milked his cows, retaining the richer strippings in the udder for his calves, the article was legally milk whatever the degree of infringement of these standards. As Mr. Justice Atkin pointed out during the appeal, a farmer was now entitled by law to give a preference to his calves over the babies of his customers. The general effect of these decisions has been to reduce to futility many milk prosecutions and to reduce materially the percentage of successful proceedings against milk-vendors for adulterating milk.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

Public Health in the Irish Free State.

SEVERAL matters of interest were discussed in the Dail recently on the vote for the Department of Local Government and Public Health. Mr. T. J. O'Connell drew attention to the insanitary condition of many school buildings in the country. Some of them were, he said, death-traps for the children who had to spend their days in them. Dr. T. Hennessy stated that milk was often produced under appalling conditions. The Inspection of Dairies and Cowsheds Order was administered nominally in Ireland, but for any useful purpose it served it might as well not have been passed. Referring to the new county health administration system, Dr. Hennessy asked the Minister to state what salaries were going to be paid to medical officers. Unless the salaries offered included a decent margin for travelling expenses the work could not be discharged satisfactorily. He said, further, that the treatment of people, especially the poor, was very defective. They now had only one workhouse in a county where of old they had six. There was no proper way of treating people in these workhouses in an up-to-date manner. The dispensary houses, where poor people waited three or four hours a week, were in a very bad way—unfit for human habitation, badly lighted, and badly heated. There was also the gravest discontent amongst medical inspectors engaged in the administration of the Act. These men, who had to spend £2000 to secure diplomas and the necessary qualification, were paid the same salaries as were paid 50 years ago.

In reply, the Minister of Local Government, Mr. Burke, said that he thought that he was entitled to some credit for an improvement in the condition of those officers. In 1904 the average salary of a dispensary doctor was £109, while now it was £251—a substantial increase. They were trying to arrive at a fair scale for dispensary doctors, and, short of sealed order, they had done their utmost to get the local authorities to improve the position. In some counties the conditions of life were such that the salaries could not be so high as in the wealthier counties. The question of child welfare, he continued, was a very big one, in reality a question of raising the whole economic level of the country. Here they had an ideal to aim at rather than a reform that could be carried out fully at once. Considerable advance would be made in that work with the appointment of county medical officers when the Local Government Bill came into operation in October next. He could not state definitely what the salaries of those officers would be, but they would be considerable, £700, and perhaps more. Those officers would supervise the milk-supply, see to the sanitary condition of schools and other important matters, which could not be attended to without such officers.

In reply to a demand that vaccination should not be enforced, Mr. Burke stated that he was a believer in vaccination and vaccine treatment. In England, where there were exemptions from vaccination, there were frequent outbreaks of small-pox. Ireland was free from the disease, except for now and again a contact case at a seaport. Until the law was repealed it was obligatory on him to enforce the Vaccination Acts.

Mr. Burke's claim that the salaries of dispensary doctors have undergone a "substantial increase" hardly bears scrutiny. With the altered value of money £251 to-day can hardly be worth more than £109 twenty years ago.

Treatment of Venereal Diseases in the Free State.

A statement was issued a few days ago as to the present position of the treatment of venereal diseases in the Irish Free State. The estimate for the coming year is greater by £1000 than that for last year. The expenditure for last year was £8913, of which the State bore 75 per cent., or £6685. The amount covers, besides the maintenance of the treatment centres, the cost of bacteriological tests, carried out in the pathological laboratories at Trinity College, University College, and the College of Surgeons; and the supply of salvarsan preparations to medical practitioners. These remedies are supplied free, but only after the provision of evidence that the doctor applying for them has experience in administration of them. Formerly, diseases of this kind were little seen outside the chief cities, but evidence is now forthcoming that they are more widely spread. In recent years the numbers of patients treated under the schemes aided by the department have increased largely. Two treatment centres are established in Dublin, and the establishment of a centre in Cork is under consideration. Extension of treatment is a matter for satisfaction, for the reason that it does not indicate greater prevalence of the diseases—as to which, in the nature of things, no statistics are available—but it does indicate that a greater number of affected persons are seeking proper treatment. The treatment centres are at Dr. Steevens' Hospital and Sir Patrick Dun's Hospital. At both of these there is, besides the out-patient clinic, accommodation for intern treatment. The number of in-patients in 1923–24 was 7022, an increase of 240 over the previous year. The number was still greater last year, though the actual figures have not yet been returned. Out-patient attendances in 1923–24 numbered 25,000, but this figure includes several attendances of each patient. An inter-departmental committee on the treatment of venereal disease has recently been appointed, and is at present taking evidence on the subject.

THE CHARCOT CENTENARY.

(FROM OUR PARIS CORRESPONDENT.)

IN a series of brilliant fêtes, Paris commemorated last week the centenary of the birth of J. M. Charcot, and at the same time the twenty-fifth anniversary of the founding of the Society of Neurology was celebrated. The Academy of Medicine held a *séance solennelle*, in which numerous delegations of doctors from abroad took part. The eulogium of Charcot was strikingly delivered by one well qualified to speak of him—Dr. Pierre Marie, who was an intimate friend of the great neurologist, had been his "interne" and "chef de clinique," and who had succeeded Charcot in the professorial chair. His speech was enthusiastically received as he made his peroration "Charcot fut un médecin génial, un maître admirable, et un grand Français." An impressive ceremony was held the same evening in the large amphitheatre at the Sorbonne, the President of the Republic being present, when Dr. Babinski spoke of Charcot's work and discoveries, in particular with regard to the conditions of ataxia, chronic rheumatism, intermittent claudication, exophthalmic goitre, cerebral hæmorrhage, aphasia, lateral sclerosis with muscular atrophy, disseminated sclerosis, hysteria, and many others. "To appreciate the value of a great man's work," he said, "let us, in imagination, delete his achievements from our present knowledge, and then try to assess the extent of the deficit. To lop off from neurology all the acquisitions we owe to Charcot would be to make it unrecognisable. How many mists of error did he not scatter! Of a truth, in the realm of neurology, not a day passes but we have recourse to some of the conceptions Charcot introduced; his work is always with us. One must bear in mind, too, the influence he had on a whole generation. Charcot was an inspiring force; in contact with him, the listless student acquired the taste for work, and the plodder became animated with the ambition to follow in the steps of the man who was familiarly known to his staff as 'le Patron.' If the French school of neurology still continues pre-eminent, this reputation is in no small measure due to the impetus which came from Charcot. By his genius and by his toil he served not only his country but all humanity, and it is for this reason that medical men from every land have come here to-day to join with us in paying tribute to the memory of the revered master."

Dr. Marinesco, of Bucarest, who had previously read to the Academy a paper entitled "A Foreign Student's Impressions of the Personality of Charcot," then spoke in the name of the foreign delegates, which was followed by an eloquent address from Sir StClair Thomson, of London, President of the Royal Society of Medicine.

Prof. Guillain, representing the Society of Neurology of Paris, recalled Charcot's famous credo, in which he insisted, in 1883, on the necessity for a perpetual alliance between clinical observation and the facts of anatomy and physiology. "The Society of Neurology, of Paris," said Prof. Guillain, "has adopted this credo in its fullest significance. Although much progress has been made since Charcot's death in methods of diagnosis and treatment, nevertheless, all this new super-structure has been built on the solid foundations laid by Charcot—or, to change the metaphor, the harvest has ripened on the field which his ceaseless toil first broke."

The meeting concluded with a noteworthy speech from M. de Monzie, the Minister of Public Instruction. In addition to these tributes, mention must be made of the series of articles on "Charcot Intime," written by Dr. A. Souques, one of his pupils, which appeared in the *Presse Médicale*. Another review of Charcot's life and work in *Figaro*, by Dr. Maurice de Fleury, who knew Charcot intimately, gives us an amusing glimpse of the great man behind the scenes. At the height of his fame Charcot was consulted by patients from Japan, India, Russia, the coasts of the Pacific, and many other distant countries, and even grand dukes had to kick their heels in his ante-chamber, what time the great neurologist attended to much more important things. He was subject to reveries and short attacks of melancholia during which it was well for even his most intimate friends not to disturb him. It has been said of him that he lacked modesty, but Dr. de Fleury modifies this judgment, pointing out that it would be more correct to say that Charcot despised the pose of modesty affected by those who are most thirsty for praise. He was apparently a good judge of contemporary genius, and he at once appreciated the greatness of Pasteur. It is curious, by the way, that the disease known in England as Charcot's disease, is spoken of in France as *arthropathies tabétiques*. This tendency of a country to relegate the honouring of its own prophets to others is also to be observed in the fact that the disease known as Barlow's disease on the continent is modestly named infantile scurvy in England.

UNITED STATES OF AMERICA.

(FROM AN OCCASIONAL CORRESPONDENT.)

The Disappearing Rural Doctor.

THE increasing tendency to specialise in medicine with the correlated shortage of general practitioners is causing increasing concern in this country, and particularly in rural areas. Dr. G. E. Follansbee, the retiring president of the Ohio State Medical Association, recently chose this subject as the theme of his farewell address. There can never be a successful "back to the farm" movement, he says, unless we provide more doctors in the country. As it is, the modern graduate, tempted by the large fees and congenial associations of the city, rarely settles at any great distance therefrom. Dr. Follansbee would cut down the pre-medical requirements and discourage specialisation. Dr. Ray Lyman Wilbur, past president of the American Medical Association, speaking at Boston to the Association of American Medical Colleges on March 5th, held that since a physician must be world-wise to be a satisfactory guide to many of his patients, it is essential not only that he should have a first-class college education, but also that his medical curriculum should be planned to broaden his public and social conceptions. He would eliminate from the medical course "the refinements of the specialities and the intensities of the laboratories."

A very careful study of the whole problem was made last year for the General Education Board.[1] The authors give reasons for doubting whether a lowering of pre-medical standards would result in a larger supply of students. Moreover, they point out that the larger towns are already super-saturated with physicians "engaged in an incessant and vigorous competition." They find the root of the matter not in the medical curriculum, but in the social and economic disadvantages of the rural practice. "No matter how severe the competition in the medical profession may become," they say, "it will not compel a physician to live in a place where a living cannot be made." The most hopeful avenue of development, to their way of thinking, is the county-town hospital serving the needs of all the physicians in the county. This method, it will be seen, presents the possibility of some degree of specialisation to the country physician, introduces the laboratory, and calls for a raising rather than a lowering of educational standards.

[1] The Distribution of Physicians in the United States. By Lewis Mayers and Leonard V. Harrison. New York: General Education Board (61, Broadway). 1924. Pp. 196.

Coöperative Medical Education.

At Loma Linda, in California, the dean of the medical school, Dr. Newton Evans, has introduced the "coöperative" plan of education. The 90 freshmen have been divided into two groups, and while the first division is at work in school the second is earning a livelihood somewhere in the neighbourhood. The groups change places every month. The employments found for students include nursing and general orderly (17), pharmacists' assistants (5), laboratory and X ray technicians, ambulance men, and assistants in physicians' offices. Dr. Evans reports that the plan is a success from every point of view. The students make more rapid progress, besides saving money. Opportunities are available for four times as many students as the number now employed.

Obituary.

JAMES SCOTT, M.B., C.M. EDIN.

THE death occurred in a nursing home in London on May 29th of Dr. James Scott, a former Governor and medical officer of H.M. Prison, Holloway. Born at Leith in November, 1853, he received his medical education at Vienna and Edinburgh, graduating M.B., C.M. Edin., with honours in 1877. After a period spent on the resident staff of hospitals at Bristol and elsewhere, he joined the prison service in 1881, entering with the highest testimonials from Lister, Clouston, Matthews Duncan, Grainger Stewart, and others. After serving at Dartmoor and Chatham convict prisons as assistant surgeon, he became successively medical officer at Manchester, Stafford, Holloway, and Brixton prisons.

A colleague, W. N. E., writes of him:—

"Probably Dr. Scott's happiest and most valuable official work was during his tenure of office as medical officer of Holloway and later Brixton prisons. There the remand and local prisoners of the metropolis and outlying areas came under his observation, and his wide experience, extensive knowledge in forensic psychiatry, impartiality, and thoroughness, soon made him an invaluable witness in the criminal courts, a recognised authority on criminal responsibility, and earned for him the confidence of the judges before whom he appeared. Throughout his career a hard worker, he never spared himself and accepted the responsibilities of his office with courage and modesty, and when the strenuous years of court work began to tell he was offered and accepted the post of Governor of Holloway prison and continued as such until his retirement in 1912. He was an ideal colleague, unselfish, generous, and understanding, and after a long day in court would return to the prison to discuss with his juniors such points of importance as had been presented to him a few hours before in the witness box. During these years he studied much, and was well versed in continental work on crime and insanity, but he wrote little. The only paper the writer can recall is one on the Death Penalty, read before the Medico-Legal Society, of which he was one of the earliest members, and at one time vice-president. But his counsel was constantly in demand when questions of criminal responsibility were under consideration."

A bachelor, Dr. Scott enjoyed to the end the devoted attentions of his sister, to whom numerous friends will extend their sincerest sympathy.

ROYAL COMMISSION ON NATIONAL HEALTH INSURANCE.—The thirtieth meeting of the Commission was held at the Home Office, Whitehall, on May 28th, Lord Lawrence of Kingsgate in the chair. Evidence as to the possibilities of assistance to the hospitals from the Insurance Scheme was given by the British Hospitals Association, represented by Mr. H. Wade Deacon, Viscount Hambledon, and Mr. J. Courtney Buchanan; by the Middlesex Hospital, represented by Mr. A. E. Webb-Johnson and Mr. Walter Kewley; and by the Sheffield Joint Hospitals Council, by Sir Henry Hadow and Mr. S. R. Lamb. Thereafter Mr. Owen Aves, Mr. Francis Gregg, and Dr. James Forrest, representing the Institute of Ophthalmic Opticians, were examined on the nature, extent, and cost of optical and ophthalmic treatment of insured persons. Proof copies of the oral evidence and the relative statements submitted at the meeting of May 14th are now on sale at H.M. Stationery Office (2*s.* 3*d.*).

Correspondence.

"Audi alteram partem."

THE ENDOCRINE FACTOR IN CHRONIC ARTHRITIS.

To the Editor of THE LANCET.

SIR,—Doubtless many, like myself, perused with interest the annotation on this subject in THE LANCET of May 9th. That an endocrine element intervenes both in the rheumatoid or atrophic and the hypertrophic type of arthritis deformans cannot be gainsaid. In 1902 I drew attention to the frequency with which vasomotor phenomena—clinically indistinguishable from true Raynaud's disease—preceded and accompanied rheumatoid arthritis.[1] Also that I had seen several examples of the *coexistence* of Graves's disease—complete or larval—with rheumatoid arthritis. Moreover, having observed that, in instances in which the Graves's syndrome *preceded* the rheumatoid arthritis, *recession* of the thyroid swelling occurred before the onset of joint swellings, I suggested that in cases of rheumatoid arthritis "with apparently atrophied thyroids and possibly in others some benefit might accrue from thyroid administration." Dr. H. K. Thompson is incorrect when he states that I "found 6 out of 14 cases of rheumatism with incomplete Basedow's." As a matter of fact, in 1903 I recorded 14 examples of the complete and six of the larval or incomplete type of Graves's syndrome coexisting not with "rheumatism" but with *rheumatoid arthritis*.[2] Fourteen of the 20 cases also suffered coincidently with Raynaud's disease, and in my work on "Arthritis Deformans," I pointed out that it was precisely in cases showing these vasomotor phenomena that thyroid therapy proved so beneficial. That following thyroid exhaustion in Graves's disease a condition of rheumatoid arthritis may supervene would seem to suggest that the latter disorder develops by preference on a *hypothyroidic* substrate. Certainly one notes frequently minor signs of hypothyroidism in rheumatoid arthritis, and often simultaneously, too, symptoms suggestive of the reverse condition—*hyper*-thyroidism—tachycardia, sweating, &c. That a condition of hypothyroidism favours the onset of rheumatoid arthritis is strongly suggested by the following sequences. Thus, in a case of Graves's disease under Pauchet, rheumatoid arthritis with scleroderma developed consecutively to thyroidectomy—both conditions clearing up under thyroid therapy. Peppo Acchiote cites a woman, aged 28, with hypertrichosis of chin and neck treated by X rays. By the eighteenth séance she had developed well-marked myxœdema and widespread arthritis, which responded dramatically to thyroid therapy.[3] Deaver, too, recently remarked that after thyroidectomy the patient's resistance to "rheumatism" and "endocarditis" appears lowered. Again, a previous history of rheumatic fever is strikingly common in rheumatoid arthritis. Now, while rheumatic fever is well recognised as predisposing to Graves's disease, it is not so well realised that it is more often followed by a state of *hypothyroidism*. The sequence, (1) rheumatic fever, (2) hypothyroidism, (3) rheumatoid arthritis, is not uncommon. During the intermediary stage of hypothyroidism the subjects commonly display vasomotor phenomena or muscular cramps indistinguishable from tetany, in addition to minor signs of hypothyroidism. As to the *hypertrophic* type or osteoarthritis, which occurs so commonly in women at the menopause, I emphasised in "Arthritis Deformans" the extreme frequency with which it

[1] Vasomotor and Ocular Phenomena in Rheumatoid Arthritis, Bristol Med.-Chir. Jour., 1902.
[2] Graves's Disease in Association with Rheumatoid Arthritis, Brit. Med. Jour., 1903, i., 1015.
[3] Types of Rheumatoid Arthritis, with Suggestions as to Thyroid Treatment, Edin. Med. Jour., 1904.

was associated with hypothyroidism, myxœdema, and goitre, and the value of thyroid therapy.[4]

To sum up, in my opinion, the "sub-thyroidic" is identical with the "arthritic" diathesis as, alike in the "rheumatism" of childhood, the rheumatic fever of older subjects and in rheumatoid arthritis and osteoarthritis, we find this same hypothyroidic taint. If my contention be true, it follows that the original predisposing factors that make for the development of these joint disorders must be sought for in those conditions—intrinsic and extrinsic—that determine the production of *hypothyroidism*. Of the determinants of hypothyroidism the most outstanding is goitre, and it is, I think, significant that the death-rate and incidence of rheumatic fever, cardiac rheumatism, rheumatoid arthritis, and osteoarthritis is markedly higher in regions traversed by the Pennine, Cotswold, and Mendip ranges, the traditional, but by no means the exclusive, sites of endemic goitre in this country.

I am, Sir, yours faithfully,

LLEWELLYN JONES LLEWELLYN.

Upper Brook-street, W., May 25th, 1925.

HEREDITY IN MENTAL AND NERVOUS DISEASE.

To the Editor of THE LANCET.

SIR,—In the leading article on this subject in THE LANCET of May 16th you state that the progress of *Homo sapiens* has been not biological but sociological; and that progress has depended on his control of and ability to grow at the expense of his environment. I feel that such an opinion is one with which nearly everyone will agree, and yet as a worker in tuberculosis I find much which cannot be explained only on a sociological basis. It is rather that sociological changes, diet, education, breeding, and whatever factors modify family life do have a much more profound biological result than we imagine.

I find in experiments in cattle that if the young female is not well cared for until she calves; if, especially, her ration in protein is not adequate, or if she suffers too much exposure, her calf is born with an inability to thrive. If a bull calf, he is of poor constitution and makes poor use of his rations. Later he is often found late in developing sexual characteristics. If such a bull is used, his calves nearly all develop tuberculosis early and acutely. I find, however, that the offspring of such a bull from heifers are usually of much poorer constitution than the offspring from cows which are manifestly tuberculous. I have thought that the older cow, even if tuberculous, could afford to deplete herself more than an immature animal could, in order to correct the fault in the male germ cell.

In experiments in immunisation of cattle, I found that using the protein from the tubercle bacillus on cows before calving that the health of the cow improved, and the subsequent calf was much more of a thriver. At the same time, although it was thus feasible to promote immunisation antenatally, I found in numerous experiments that the greatest immunising agent is a resistant sire. The female, like the soil, will respond if cared for, but the sire must be right. I considered that the best sire was an immunised sire, or one known to be strongly resistant.

That such factors hold in the human race I believe from a considerable experience of tuberculosis in this country and in Western Canada. When stock deterioration sets in, the female suffers, and then her male offspring, even if he grows up to be a fair specimen of a man, is apt to bring children into the world that nobody can do anything with. In nature such males would be wiped out quickly. Contending, then, that society aids in man's progress, it can only do so as long as it continues to perform the duty of batman to Mother Nature herself. So George Meredith thought.

If man's progress is sociological only, then we cannot stand. Nature will have nothing to do with helpers who forget her stern method of soil replenishment. For then early death becomes a biological necessity. A point of importance, too, is that a breeder on poor land may, by buying in concentrated food actually create a higher class of animal than a breeder on good land. The peril of the breeder on good land is that he relies too much on his good grass; while the peril of the breeder on poor land is that if business is bad, the stock deterioration must be faster, if it does not pay to buy in food for them.

This country resembles the latter breeder. We have moved along sociological lines and have been able to sustain a high standard of society by buying in our protein from abroad. At the present moment there is some deterioration owing to the lower standard of wages and so on. The women suffer as usual; and while all sorts of remedies may be suggested, none are of great value, excepting forbearance towards overstocking. The deterioration will be swifter in proportion to the inability to rear good in preference to many inferior stock—stock prone to be infected. Therefore the comfort that comes from attention to a betterment of the environment may be short-lived and also it may prove too costly.

The strengthening of the hereditary factors is of vast importance. This is a difficult matter; yet much could be done by a fuller realisation that biological laws are bound to be paramount in the long run.

I am, Sir, yours faithfully,

J. J. THOMSON,
Chief Clin. Tuberculosis Officer, North Riding of Yorks.

May 20th, 1925.

THE RÉGIME OF FLUIDS IN VARIOUS FORMS OF NEPHRITIS.

To the Editor of THE LANCET.

SIR,—In patients suffering from various forms of nephritis it is essential to regulate with care the fluid intake, as damaged kidneys necessarily modify diuresis, and therefore the rôle of water in the body. I here suggest some guiding points in the administration of fluids in various forms of kidney trouble.

Acute Forms of Nephritis.—Milk is the régime of choice for the acute forms of nephritis, as milk, while it is a complete form of alimentation, possesses the advantage of constituting a diet which is both practically free from sodium chloride and is diuretic. One litre of milk contains only 1·50 to 2 g. of NaCl, along with 40 to 50 g. of lactose, an essentially diuretic sugar. But milk diet, putting aside all question of digestibility, possesses one grave defect in that it is purely a fluid diet. For every 1000 g. of milk there are about 850 g. of water. That point should never be lost sight of when a patient suffering from acute nephritis is put upon a milk diet. The milk must be graduated in relation to the functional possibilities of the kidney, and should therefore be divided into small doses, which can be distributed over the whole 24 hours, the quantity of the doses being determined according to the amounts of urine which the kidneys are capable of eliminating in the 24 hours.

Chronic Forms of Nephritis.—The fluid régime differs according as one has to deal with the three great syndromes which either singly or all together characterise the evolution of these conditions: (1) The chloruræmic syndrome; (2) the syndrome of hypertension; (3) the nitrogen-retention syndrome.

(1) *The Chlorurœmic Syndrome.*—Here the fluid régime must overcome the chloride retention, and milk diet is therefore indicated. But in forms of chronic nephritis this diet, if prolonged, will cause dyspeptic disturbances. Moreover, after the lapse of some days it acts neither upon the œdema nor upon the albuminuria. Milk must be reserved for acute attacks with more or less grave threatenings of urœmia. Otherwise the patient is put on a mixed diet, or even one without milk, but always dechlor-

[4] Arthritis Deformans, pp. 226–229, 1909.

urated, and the beverages consist of diuretic mineral water, increased in proportion as the power of elimination on the part of the kidney becomes more marked.

(2) *Syndrome of Hypertension.*—It is in the syndrome of hypertension that the régime of fluids perhaps requires the most delicate handling; but it is also in this syndrome that when it is well ordered and strictly supervised, its utility is specially manifest. It was only a short while ago that this water treatment of hypertension was first attempted. A few years ago it would have seemed to be a dangerous error to suggest the giving of fluids to patients whose greatest trouble was that of hypertension. It was known, however, that the evolution of these cases of hypertension was characterised by a tendency on the part of the organism to auto-intoxication, principally due to renal and hepatic angio-sclerosis. Physicians attached to hydro-mineral diuretic stations have shown by their detoxication treatment that the real danger did not consist in giving beverages to such patients, but in withholding the beverages from them. At one time the classic treatment was the dry diet. To-day the good effects of treatment by diuresis are recognised; fluid régime in cases of hypertension is well-defined and definitely established. But the water treatment requires caution. The treatment must be supervised with the sphygmomanometer at hand, and with the check upon elimination of urine always in view, for over-distension of the vascular system is always possible, and excess of arterial pressure may result from an attack of angio-spasm. But with these precautions good results may be obtained from diuresis treatment such as that employed at Vittel. The dosage of fluids is carefully regulated and the fluids are taken fasting, early in the morning or late at night, the patient lying down (clino-statism). The sum-total of the fluid ingested should never be great. One must always aim at adequate diuresis without polyuria, which could only be preceded by an increase in the volume of blood and increase of blood pressure, possible causes of immediate untoward events.

The patients who secrete much water during the day should be put on a relatively large amount of fluids. But those who secrete water mainly during the night (nycturia) should be very carefully watched. All excitants of the cardiac nervous system, alcohol, coffee, and tea, should be forbidden. The bouillons and meat-juice which possess vaso-constrictor properties and cause a rise in the blood pressure should also be interdicted. And it is very particularly in such cases that beverages taken late at night are specially desirable. Drinks at meals should always be restricted.

(3) *The Nitrogen-Retention Syndrome.* — In the nitrogen-retention syndrome the permeability of the kidneys is specially affected in all its modalities. Here uræmia assumes a threatening aspect. The diet should be of low nitrogen content, as often as possible lacto-vegetarian and slightly dechlorurated. As a rule there is no œdema. The water is no longer retained by the salt and is not dependent upon chloride retention. But, as a set-off, arterial hypertension and cardio-vascular phenomena are almost always present. At all costs, fatigue of the heart must be avoided. With that aim in view the amount of fluids must be reduced and they must be distributed in small doses frequently repeated in order to obtain adequate diuresis. "The Fractional Diuresis Test," which I discussed at length in THE LANCET,[1] indicates what is the secretory power of the kidney for water, and gives the precise indications for the drink régime. If a kidney can only eliminate 60 c.cm. of water at the most every half-hour, or else 50 or 30 c.cm., it is 60, 50, or 30 c.cm. of water that should be given as a maximum every half-hour. Thus one is enabled to obtain the maximum diuresis without in any way overtaxing the cardio-vascular system.

I am, Sir, yours faithfully,

P. L. VIOLLE,
Consulting Physician at Vittel; Director of the Laboratory, Institute of Hydrology, Paris.

May 25th, 1925.

THE LANCET, 1924, i., 998.

CLEAN MILK IN HOSPITALS.

To the Editor of THE LANCET.

SIR,—Since the autumn of 1917 the health committee of the city of Worcester has had a small herd of dairy cows, free from tuberculosis, in a farm which it has established adjoining the isolation hospital. The committee for some years previous to 1917 had endeavoured to obtain milk from the neighbouring farmers from cows certified to be free from tuberculosis, but no farmer in the neighbourhood would contract for milk on those terms. The small herd of cows is managed by a herdswoman who is well trained and competent for the work, and the results have year by year been very satisfactory.

It is an astonishing thing to me that the educated British public are so apathetic as regards their milk supply.—I am, Sir, yours faithfully,

MABYN READ, M.D.,
Medical Officer of Health, Worcester.

May 26th, 1925.

EXCESSIVE INFANT MORTALITY AT MARKET DRAYTON.

To the Editor of THE LANCET.

SIR,—I note in your issue of May 16th a reprint of my question to the Minister of Health with regard to the infantile mortality of Market Drayton which is double that of the neighbouring Newport, and thrice that of Wellington, the other contiguous locality. I presume that there must be reasons for this unhappy phenomenon, which I see was noticed at a public meeting in the place itself held early in this month. As a report on the subject exists, it is curious to speculate on the reasons which have prevented it from being made public. In the interests of Market Drayton itself one would have supposed that the evil being recognised, the remedy should be prescribed.—I am, Sir, yours faithfully,

House of Commons, May 27th, 1925. C. W. C. OMAN.

BAKER'S ITCH AND WORKMEN'S COMPENSATION.

To the Editor of THE LANCET.

SIR,—The question raised is hardly as simple as Captain J. T. Ainslie Walker would suggest. I have had under my purview as many cases of dermatitis in confectioners as in bakers. The symptoms in both have been practically indistinguishable. No improvers are used in the confectionery trade. Again, of the number of cases of "baker's itch" which have been under my personal care, so far as I could ascertain, only about one-half were using flour which was supposed to contain improvers.

I am, Sir, yours faithfully,

Wigan, June 2nd, 1925. R. PROSSER WHITE.

THE BATEMAN APPEAL FUND.

To the Editor of THE LANCET.

SIR,—In spite of the generous and chivalrous support of THE LANCET, and in spite of the appeals that others of us have made—made on behalf of one of us in dire distress—only a few more pounds have been added to this fund. It is difficult to realise that such indifference can exist in our profession; a British court of justice seems no longer our standard of right and wrong. It is harder still to think what the great names of the past would think of our indifference; generosity was ever their supreme characteristic. I enclose a third small contribution in the hope that those who are too busy, those who are successful, those who are indifferent, and all those who pass by, may for a moment pause and put themselves in Dr. Bateman's position and by so doing may be stimulated to help a colleague passing through a physical and mental anguish we may all well hope to be spared.

I am, Sir, yours faithfully,

Margate, May 31st, 1925. A. GRAHAM-STEWART.

INTER-STATE POST-GRADUATE ASSEMBLY OF AMERICA.

VISIT TO LONDON, JUNE 2ND–6TH, 1925.

President—H.R.H. THE DUKE OF YORK, K.G.

INAUGURAL MEETING.

ON the morning of Tuesday, June 2nd, at Wigmore Hall, Wigmore-street, when the Duke of York presided over the inaugural ceremony, His Royal Highness, in extending a cordial welcome to the Guests from Overseas, said that some came as representatives of a great and progressive nation with which already we had so much in common, while others were our own kinsmen from Canada, a vast Dominion of self-governing peoples whose record of service to the Empire was unsurpassed. These considerations alone, he said, would have ensured for the Assembly a more than friendly reception. But further, our guests, he said, formed a great army of skilled physicians and surgeons whom we were delighted to honour, so that the members of the medical profession in this country were united in their desire to accord to the Assembly a hospitable reception, and to make the occasion both instructive and enjoyable. The names of the distinguished lecturers and demonstrators on the programme showed, he held, that the time of the visitors would be well spent, for they would secure at first hand the views and opinions of those whose knowledge and skill had combined to raise them to their highest rank in their profession. In conclusion, His Royal Highness said that it was his earnest hope that when the members of the Interstate Post-Graduate Assembly left our shores they would not only have obtained professionally some benefit from this visit, but that they would also take back with them the happiest recollections of their brief stay in our midst. Expressing his appreciation of the honour which he felt at being made an honorary member of the Assembly, the Duke of York said he had been much interested in its history, and thought that Dr. Mayo was to be congratulated on the growth and expansion of an organisation which in the short space of nine years had done so much valuable work. He congratulated Mr. Franklin on the devotion of much time and energy to the organisation of the visit, and declared the meeting of the Assembly open.

Mr. Neville Chamberlain, the Minister of Health, said that he was happy in being permitted on behalf of His Majesty's Government in general and on behalf of the Ministry of Health in particular to add to the President's words of welcome. To cross the Atlantic was no longer the adventure that it was a few years ago, but he realised that many of his hearers must have travelled hundreds of miles before setting foot on board ship, while all must have made special arrangements in order that their work might be adequately carried on during their absence. It was, therefore, a compliment of no common order to this country that they had thought it worth while to be present. Among the guests, he pointed out, were representatives of every city in the Dominion of Canada and every State in the American Union, and it was gratifying, in this small island, to be able to open arms to a whole continent at once. It was, too, an impressive thought that our visitors would carry back with them the results of their observations and the additions to their knowledge and spread them broadcast through so vast an area, returning to fight the great enemy of humanity, disease which knew no discrimination between nation and nation, reinforced and invigorated by experience of methods that had proved effective in the hands of others. The benefits, he concluded, would not be all on one side, for our physicians and surgeons would learn from contact with their guests, and he wished to all the Assembly a time of pleasurable and profitable study.

Sir Humphry Rolleston, President of the Royal College of Physicians of London, in extending the warmest welcome to the overseas colleagues, said that meetings such as these increased, if that were possible, sympathy as well as promoting common action. Medical men were students all their days and were most anxious to learn how they could best apply their studies as post-graduates and so keep up with the ever-advancing tide of medical knowledge. Post-graduate education was a very urgent problem in London and much could be learned from the American visitors. Less than ten years ago there was a Tri-State Assembly which had now extended and included all the provinces of Canada and all the States of the Union, and we, in this country, had much to learn from such an organisation. In conclusion, Sir Humphry Rolleston referred to that "beloved physician," Sir William Osler, who would have welcomed such a meeting, while he paid a special tribute to the honorary organiser of the Assembly, Mr. Philip Franklin.

Sir John Bland-Sutton, President of the Royal College of Surgeons of England, drew a humorous parallel between the migration of birds and the irruption of doctors from Canada and the United States under the leadership of Dr. Mayo. It was a good thing, he said, to meet a man face to face in his own wards or operating theatre, but better still to meet him socially, for in this way lasting friendships were formed. As President of the Royal College of Surgeons of England he bid them welcome.

Mr. Alanson B. Houghton, the American Ambassador, on behalf of his countrymen, thanked the Duke of York for his support of the Assembly. In accepting the presidency of the British organisation, he said, His Royal Highness had furnished one more evidence of the reality of those friendly ties which bound the countries and peoples together. The gathering to-day would recall the comradeship of the British and American medical professions in war, now followed by a comradeship in peace. Further, he desired to thank Mr. Neville Chamberlain for his interest and goodwill, and it was a source of distinct satisfaction that the Minister of Health should be here to welcome them, for no man was more keenly interested than Mr. Chamberlain in seeking to bring about a fuller coöperation in research. To Sir Humphry Rolleston and to Sir John Bland-Sutton they also owed a debt, and he could only hope that one day they would be able to repay it in some slight degree if both those gentlemen would honour the United States by a visit. To the honorary staffs of the numerous hospitals, who had combined to make up a full programme of post-graduate work, and to Mr. Philip Franklin he further expressed a debt. Nowhere else than in England, as he knew from experience, would his compatriots find a hospitality so generous, gracious, and altogether delightful, said the Ambassador, while warning the visitors against its potential dangers.

Dr. Charles H. Mayo expressed the great pleasure that it gave the members of the Assembly to have a Royal welcome seconded by many able and representative speakers of England. Such a welcome would be recorded in all the States and Provinces of North America; it would add to the warmth of feeling for the mother country, and would bring together more closely the English-speaking peoples and maintain their high position in all scientific work. In conclusion, and addressing the Duke of York, Dr. Mayo said the Assembly had hitherto had but one honorary member, Mr. Coolidge, the President of the United States, but now they wished to double the honorary membership and if it be His Royal Highness's pleasure, Dr. Mayo said, "by and with the authority vested in me by the members of the Interstate Post-Graduate Assembly of America I herewith and hereby declare you an honorary member of this Association with all the rights and privileges pertaining thereto."

His Royal Highness having vacated the chair, a series of brief lectures, introducing fundamental scientific questions, was commenced.

THE ÆTIOLOGY AND MEDICAL TREATMENT OF GALL-BLADDER DISEASE.

BY SIR HUMPHRY ROLLESTON, BART., K.C.B., M.D.

A KNOWLEDGE of the causation of gall-stones and inflammation of the gall-bladder is, of course, essential for satisfactory treatment.

In the first place it should be mentioned that the clinical label of gall-stones or cholelithiasis is often and naturally used for symptoms common to them and to inflammation of the gall-bladder—conditions very often combined but also occurring independently. Although a distinction is drawn between them in systematic treatises, and of course exists, they are very closely bound up together, being often successive or alternating stages in the patient's history and giving rise to very similar symptoms. Unless a calculus is indicated by X ray examination or is passed in the stools, a diagnosis of gall-stones, even though there may have been an attack of acute biliary colic, is open to doubt, and yet it is more often made than the less committal one of cholecystitis, which in the original but now forgotten sense means merely disease of the gall-bladder. It is, of course, true that the termination *-itis* now has a universal significance of inflammation, but it was not always so. Originally the affix -itis was a Greek feminine adjectival termination, and in words like neuritis, peritonitis, pleuritis, agreed with νόσος (disease) understood, so that, for example, ἡ νευρῖτις νόσος simply meant *the* disease of the nerves; the implication that *the* disease of organs was inflammatory came later. In a somewhat similar manner melæna signifies *the* black disease, and pneumonia *the* disease of the lungs.

The Formation of Gall-stones.

There are two distinct views about the formation of gall-stones:—

(1) The infective or inflammatory theory enunciated by Naunyn is to the effect that a local inflammation of the gall-bladder walls leads to an increased formation of cholesterol by the epithelium lining the gall-bladder, and that the liberated cholesterol is cemented together by bilirubin calcium. According to this view, cholecystitis is a necessary antecedent to the formation of calculi, but it has been urged that cholelithiasis does not invariably follow cholecystitis, and therefore that some additional factors, such as an increased amount of cholesterol, stagnation with excessive concentration of the bile in the gall-bladder, are necessary. It should be noted that concentration of bile to perhaps one-eleventh of its original bulk is a normal function of the healthy gall-bladder (Rous and McMaster), and that therefore an excessive concentration, such as might occur in stasis, must be premised. That infection of the gall-bladder and biliary stasis cause cholelithiasis has been repeatedly proved in animals (Gilbert, Mignot) and the association of infection—post or propter—with gall-stones is universally acknowledged in human pathology.

Another explanation of the mechanism by which infection causes cholelithiasis is that put forward by Hurst—namely, that as cholecystitis always sets up hepatitis (Evarts Graham), the formation of bile acids, which keep cholesterol in solution, is inhibited, and accordingly cholesterol is precipitated. Cholecystitis may be set up by micro-organisms reaching the gall-bladder wall by the blood-stream—for example, from the throat and from abscesses at the apices of the teeth; streptococci from the throat have been found to have a special selective tendency to attack the gall-bladder (Rosenow). But, generally speaking, infections of the alimentary canal, especially with virulent *B. coli*, appear to be the more common causes of cholecystitis, the micro-organisms being carried by the portal vein to the liver, excreted into the bile, and finally reaching the cavity of the gall-bladder. Thus appendicitis and cholecystitis are frequently present in the same patient, and probably the usual sequence of events is that the infection originates in the appendix and secondarily attacks the gall-bladder. It has recently been urged that latent appendicitis, in which there is no clinical history of an attack, is often the antecedent of cholecystitis (Caplesco).[1] When an operation on the gall-bladder is undertaken, the appendix is usually and rightly examined, and if diseased removed, so to speak, in the surgeon's stride; but the converse is not so frequent, and accounts for some cases in which symptoms persist after operation, because the reflex dyspepsia is partly or largely due to the irritation exerted by a chronically inflamed gall-bladder. In the past enteric fever, meaning thereby infections due to *B. typhosus* and *B. paratyphosus* A, B, and C, took a high place in the ætiology of cholecystitis and gall-stones for the following reasons: The clinical sequence was often noted, typhoid bacilli are constantly present in the bile in the disease, and they have been demonstrated in the calculi. But there is a reaction against this view, for enteric fever has become comparatively rare in this country, and gall-bladder affections are, if anything, more frequently recognised. Blaxland[2] found a history of enteric fever in 5 per cent. of a series of 100 cases in Norwich; Chauffard[3] in 19 per cent. of 166 cases in Paris. In America, where enteric fever was until comparatively recent years common, a history of that disease would naturally be higher in all patients; at the Johns Hopkins Hospital, among 888 cases of gall-bladder disease, 28 per cent. gave a history of enteric fever (Blalock).[4] Infections are prone to occur in the puerperal state, and this is one, but not the only or chief, cause of the frequency of gall-bladder disease in women who have borne children.

Rovsing[5] from examination of 530 cases of gall-stones found that 314 were sterile, and believes that infection of the gall-bladder is always secondary to the presence of gall-stones, and further, that when infection has once occurred it persists and does not die out. He thus meets the obvious criticism which the adherents of the inflammatory theory might bring against his results—namely, that failure to cultivate organisms from the gall-bladder does not prove that there has never been any infection.

(2) The biochemical or metabolic theory that there is an increase in the cholesterol content of the blood and so in the bile, and that thus pure cholesterol calculi are produced (Aschoff and Bacmeister); but by damaging the gall-bladder and reducing its resistance to infection these originally aseptic calculi may be indirectly responsible for the production of the commoner calculi as mentioned above. Experimentally Rous, McMaster, and Drury have aseptically produced showers of small calculi composed of organic debris and calcium carbonate and calcium-bilirubinate in sterile bile; and it has been suggested that in man simultaneous formation of multiple calculi occurs from metabolic or chemical alterations in the composition of the bile—a critical deposition. This is supported by the very large number—the record at present appearing to be 14,000 (Schackrev)—of small calculi all of about the same size.

The origin of the blood cholesterol is of interest in connexion with the prevention of gall-stones. Like uric acid, it may be either endogenous—namely, produced in the body, or exogenous and taken in as a constituent of foods, especially brains, yolk of eggs, and fats. The organs of the body richest in it are the central nervous system, the cortex of the adrenals, and the corpora lutea. Sixty years ago Flint of New York considered that it was formed in the brain, and so passed into the circulation; Chauffard's pupils, Laroche and Grigaut,[6] in 1913 disproved this by experiment. Chauffard, Laroche, and Grigaut[7] believe that

[1] Caplesco, C. P.: Bull. Acad. de Méd., Paris, 1924, 3e ser., xcii., 869.
[2] Blaxland: Practitioner, 1914, xcii., 646.
[3] Chauffard: Leçons sur la Lithiase Biliaire, p. 36, 1914, Paris.
[4] Blalock: Bull. Johns Hopkins Hosp., Baltimore, 1924, xxxv., 291. [5] Rovsing, T.: Acta Chir. Scandinav., 1923, lvi., 103.
[6] Vide Chauffard: Leçons sur la Lithiase Biliaire, 1914, p. 54.
[7] Chauffard: Laroche et Grigaut, Ann. de Méd., Paris, 1920, viii., 149.

cholesterol is formed in the adrenal cortex and the corpora lutea, especially of pregnant women who have to supply the fœtus with large quantities of cholesterol for its nervous tissues, whereas Landau and McNee[8] regard the undoubted accumulation of cholesterol in the adrenal cortex in arterio-sclerosis, and in the corpora lutea as deposits and as an index of the cholesterol content of the blood. The extent of the endogenous origin of cholesterol is thus open to question.

The cholesterol content of the blood varies much with the amount taken in food, but in normal persons it is difficult to induce a permanent well-marked increase in the amount of cholesterol in the blood, and thus suggests that there is a metabolic mechanism which maintains an equilibrium in this respect. But disorder of the fat metabolism, like that of protein and carbohydrate metabolism in gout and diabetes, may well exist and lead to a retention of cholesterol in the body. In this connexion it may be noted that gall-stones are not infrequently hereditary. Any inherited disability to deal with the metabolism of fats would, of course, render the subject specially prone to develop cholesterolæmia when on a diet containing much cholesterol. Such a diathesis helps to explain differences in the racial incidence of gall-stones—common in German women, rare in Russians, Indians, and Japanese. A high cholesterol content of the blood may also depend on diminished excretion; thus in hepatic insufficiency, especially in obstructive jaundice, the amount in the blood is usually increased, and in chronic cases deposits, or tophi, of cholesterol—xanthomas—may occur, a process analogous to uratic tophi in the gouty; the familiar arcus senilis, the sparkly synchises in the vitreous humour, and the white spots of albuminuric and diabetic retinitis are also regarded as deposits of cholesterol. In the form of slight cholecystitis known as "the strawberry gall-bladder," from the contrast between the reddened background and the yellow specks due to collections of cholesterol in the mucosa, it is unsettled whether the cholesterol in the villi is absorbed from the gall-bladder bile or deposited from the blood. But by whatever route the cholesterol reaches the inside of the villi it seems probable that detachment of these cholesterol-laden villi provides the nuclei of future multiple calculi. Aschoff suggested that women after delivery, who are prone to show a high cholesterol content of the blood, are particularly likely to develop gall-stones if they do not suckle their babies and thus fail to excrete fats in their milk.

To sum up, it may safely be stated that both these ætiological factors of gall-stones—the infective and the metabolic—are operative, sometimes one alone, probably more often both together, the infective factor being enforced and assisted by the metabolic; both therefore must be taken into account in the prophylactic measures and the medical treatment.

Prophylactic or Preventive Treatment.

From the point of view of the infective causation it is obvious that focal infections, such as pyorrhœa, dental caries, enlarged tonsils, suppuration in the accessory nasal sinuses, and appendicitis should be removed or otherwise cured. In enteric fever, in which the bile in the gall-bladder contains typhoid or paratyphoid bacilli though cholecystitis is relatively infrequent, it is well to give during convalescence hexamine for its bactericidal action. The rationale of the hexamine treatment of gall-bladder infections requires a few words of explanation, and may conveniently be dealt with here; hexamine is not itself an antiseptic, but in an acid medium it gives off formaldehyde which is; as the bile is not acid it is not at first sight clear how the administration of hexamine removes experimental infection of the biliary system, as shown by Crowe,[9] how it sterilises the infected bile from a biliary fistula, and how it appears to act beneficially in cholecystitis. There has, therefore, naturally been some scepticism as to the real value of hexamine in biliary infections, and indeed De Edes,[10] though not dealing with gall-bladder infections, concludes, as the result of a rather elaborate chemical research, that there is not any good evidence for the use of hexamine orally or intravenously as a systemic antiseptic in various diseases and localised infections. Recently, however, Knott[11] has shown that in infected bile the bacteria produce around them sufficient acid to liberate formaldehyde. A large quantity, according to Crowe[12] 75 grs. daily, of hexamine is required to disinfect the gall-bladder and bile-ducts; but amounts far short of this often irritate the urinary bladder causing frequent micturition so as to interfere with sleep and the patient's comfort, and sometimes even hæmaturia. As the vesical irritation is due to the liberation of formaldehyde in acid urine, Hurst[13] gives sufficient citrate of potassium to keep the urine alkaline and thus obviates this troublesome result, finding that eventually as much as 90 grs. daily can be given.

From the biochemical or metabolic aspect of causation, prophylactic measures should be directed to the restriction of foods rich in cholesterol in patients prone to develop a high cholesterol content of the blood as the result of pregnancy and recent enteric fever. The foods in question are yolk of eggs which contain the closely allied body lecithin, brains, and fats such as cream, butter, bacon, pork, stews, fried fish, goose, duck, sweetbreads, liver, kidneys. Vegetables, with the exception of beans and peas which are fairly rich in phylocholesterol, and meats, skimmed milk, carbohydrates and sugar which are so valuable in keeping up and restoring the nutrition of the liver cells, may be taken; but with regard to the last it must be remembered that obesity should be guarded against. Food should be taken at comparatively short intervals and in small amounts, as this leads to frequent evacuation of the gall-bladder. Over-eating should be prevented and exercise as far as possible insisted on. A lax condition of the abdominal walls should be met by breathing and other exercises.

Medical treatment is, of course, not so radical or so satisfactory as the surgical removal of the calculi and the gall-bladder which when symptoms occur is almost always infected and inflamed. Attempts to dissolve gall-stones cannot be regarded as likely to succeed. Calculi have been introduced into healthy gall-bladders of animals and observed to disappear, but there is serious doubt whether this observation can be applied to man, for these experiments were performed on dogs (Harley and Barratt; Bain, von Hansemann) in which the cholesterol content of the bile is low, and further, human gall-bladders are usually infected and inflamed. Olive oil certainly dissolves gall-stones in a test-tube, but the administration of olive oil by the mouth cannot reach the gall-bladder. There is a fallacy about the supposed success of the treatment by olive oil given orally, namely, that the altered oil—crystals of the fatty acids—may be regarded as softened calculi. Some of the good clinical results ascribed to olive oil may be due to the inhibition of hyperchlorhydria accompanying the reflex gastric disturbance due to the gall-bladder irritation. Oleic acid has been regarded as a cholagogue, and oleate of sodium is sometimes given in order to increase the flow of bile and so lead to solution of the cholesterol of the calculi by the bile acids. But of the numerous drugs at one time or another spoken of as cholagogues bile salts are the only certain ones; salicylate of sodium, which is often given with this object, benzoates, chloral, and vitamin extract of yeast, though stated by some, cannot be regarded as proved to be true cholagogues; bile salts are given in a cachet and capsule. Lyon's method of non-surgical drainage of the gall-bladder by aspiration through a

[8] Landau, M., and McNee, J. W.: Beitr. z. path. Anat., u. z. allg. Path., Jena, 1914, lvii., 667.
[9] Crowe, S. J.: Johns Hopkins Hosp. Bull., Baltimore, 1908, xix., 109.
[10] De Edes, F.: Arch. Int. Med., Chicago, 1924, xxxiv., 511.
[11] Knott, F. A.: Guy's Hosp. Reps., 1923, lxxiii., 195.
[12] Crowe, S. J.: Johns Hopkins Hosp. Bull., Baltimore, 1912, xxiii., 255.
[13] Hurst, A. F.: Practitioner, London, 1923, cxi., 195.

duodenal tube, after spraying the duodenal papilla with magnesium sulphate solution to relax Oddi's sphincter at the lower end of the common bile-duct, appears to be admirably adapted for the relief of cholecystitis. In other respects the general treatment is on much the same lines as the prophylactic measures.

THE FIRST AND LAST KINK.

BY SIR W. ARBUTHNOT LANE, BART., C.B., F.R.C.S.

A QUARTER of a century has elapsed since I described this condition and called the attention of the profession to what I believe to be by far the most important evolutionary structure in the human body which has ever been observed, and one which is productive of very disastrous consequences.

I was led to the discovery and appreciation of the importance of this structure by a study of the changes which the body undergoes when its mechanical relationship to its surroundings is altered from the normal. I found that the human anatomy bears a simple definite mechanical relationship to its surroundings and varies rapidly with any change in that relationship. This I demonstrated in the clearest manner possible in the dissecting room of Guy's Hospital by the examination of the dead bodies of labourers who had been engaged during their lives in various arduous occupations. A careful investigation of the changes which their structure underwent in consequence of the special functions performed showed me that they were so characteristic, so definite, and so precise, that from an examination of the anatomy of these labourers I was able to determine with absolute accuracy the life-history of the individual, or in other words, the functions he performed during his life-time.

Laws Governing Changes in Structure.

The laws which I formulated as governing these changes are quite simple, and can be readily understood by a study of these labour conditions.

They are: (1) The skeleton represents the crystallisation of lines of force; (2) pressure produces definite changes; (3) strain produces definite changes; and (4) without the presence of pressure or strain an old mechanism may be altered or an entirely new one developed. The resulting changes develop to meet the altered mechanical relation of the individual to his surroundings and economise the expenditure of nerve and muscle energy.

The principles which govern the mechanical relationship of the organism to the gastro-intestinal tract which is inside the body differ in no particular from those that influence its behaviour in its mechanical relationship to surrounding objects. *Precisely* the same laws apply in both instances.

The consequences which result from the habitual overloading of the end of the large bowel with at least 24 hours' accumulated contents (a condition which is practically universal in our state of civilisation and is recognised as being normal), are met on the part of the organism by an attempt to control the excessive dilatation, distension, and elongation of the portions of the intestine which are affected by that accumulation. The effort to establish this control is usually more or less successful, but the degree of success attained varies with the vitality of the individual. The attempt to control these changes consists in the formation of acquired firm, strong bands or membranes simulating peritoneum in appearance. These develop along the lines of strain on the under surface of the mesentery. They gradually secure, contract, and shorten up the mesentery of the iliac colon and finally grip the bowel itself, rotate it on its longitudinal axis, and eventually fasten it to the floor of the iliac fossa. The alteration in the functioning of this portion of the intestine which results from the formation of these bands and their mechanical effect upon the mobility of the intestine lead to a corresponding degree of interference with the passage of material through the anchored and obstructed bowel. In civilisation the consistence of the contents of this portion of the large bowel is almost always firm and may be often quite hard. This fact again increases still further the difficulty which is experienced in the passage of the fæcal matter through the obstructed segment of bowel.

The "First and Last Kink" and its Consequences.

Here I would again remind you of another law which I have formulated—namely, that all changes that ensue in the body from an endeavour on the part of the organism to establish a mechanical relationship to abnormal surroundings at first serve a useful purpose, but later tend to shorten the life of the individual. In no instance is this law so true and so clearly illustrated as it is in the case of what I call the "first and last kink." The effect upon the entire gastro-intestinal tract is in the first instance simply mechanical. Later it results in the contamination by septic organisms of the nutrient material dammed back and stagnating in the small intestine and stomach and in the terrible sequence of the innumerable morbid sequelæ which ensue in consequence of these mechanical and toxic conditions. When I first called attention to this kink and its consequences the less observant and more conservative section of the profession denied their existence, and some isolated members, with that lack of courtesy which is so often associated with a corresponding want of comprehension, asserted that the kinks did not exist in the patient's body, but were present only in my brain.

The more intelligent section of the medical profession looked for and investigated the several kinks I had discovered and finding them began by debating their origin. Some believed that they were produced by inflammation, since they could not conceive an acquired band or adhesions arising in any other way. Others considered that they were congenital. Many observers, while recognising them, were of opinion that they did not exert any control over the passage of the contents through the anchored bowel. The simple manner in which they come about was not realised, for the obvious reason that the very definite changes which the body undergoes when its mechanical relationship to its surroundings are altered from the normal had received little or no attention from the profession.

The Atonic Variety of Obstruction.

While in a considerable proportion of cases the organism has sufficient vitality to form these bands and to effect an obstruction limited to this area in a number of feebler subjects owing to a want of formative capacity, either no bands are developed or they are not sufficiently strong and rigid to secure the colon which escapes from their controlling influence. In consequence, the lower bowel becomes enormously elongated and distended. The puddling in the pelvis of this elongated and dilated distal portion of the colon produces a degree of obstruction to the passage of solid contents through it which is increased by straining in the effort to expel the motion. It is important to realise that the obstruction so produced is often much greater than that brought about by the limited and localised obstruction caused by the acquired bands forming the first and last kink. The consequences of this type of obstruction differ definitely from those produced by the kink in that throughout the length of the proximal intestinal tract little or no effort is made to control the elongation and distension of the colon, small intestine, and stomach, so that the ulceration and cancer of the large bowel, duodenum, and stomach, so common in the case of the first and last kink due to a definite local constriction, do not occur. On the other hand, in this type, which may for convenience be called the atonic variety, the infection of the food-supply which is accumulated in much greater quantity in the elongated dilated bowel, the consequent

intestinal auto-intoxication, and the changes resulting from it form a very much more marked feature. All the mechanical changes I described have been confirmed radiologically by Dr. Jordan, who has studied the subject so closely for many years. They have also been fully verified in every detail by Dr. Mutch by his accurate and careful investigations in the post-mortem room on the bodies of patients who died of cancer in the wards of Guy's Hospital.

Disastrous Sequelæ.

I need hardly again remind you of the disastrous sequelæ of the obstruction of the colon, either by the formation of bands or by an excessive elongation of its terminal segment. Briefly, they are inflammation of the mucous membrane of the tract, ulceration, first simply septic and often later cancerous at the several areas exposed to constant impact or strain, infection of the intestinal contents, the contamination of the food-supply of the body, the flooding of the circulation with organisms, toxins, and other poisonous bodies, and the deterioration of the cells of every tissue in the body, rendering them liable to the invasion of the organisms of innumerable diseases. As the result of my observations, which have now extended over many years, I am exceedingly impressed by the sequence of cancer and intestinal stasis. In my opinion these are two factors in the causation of cancer as we see it in civilisation—namely, the mechanical and the toxic.

I have observed cancer imposed on the mechanical and toxic results of chronic intestinal stasis so frequently that I am convinced that the sequence is not a mere chance. I have been equally impressed by the absence not only of cancer, but of all the other direct and indirect results of stasis as we see them in civilisation in such communities as do not suffer from chronic intestinal stasis.

Treatment.

The principles governing the treatment which I now adopt in these several conditions differ in no detail from those I formulated 25 years ago.

In the milder cases of obstruction the lubrication of the canal and the consequent softening of the intestinal contents by the free use of paraffin on the principle of the flushing tank are sufficient to meet the disability resulting from a moderate degree of obstruction. Suitable diet, kaolin and belladonna are most helpful adjuvants in that they control the spasm of the inflamed bowel and help to reduce the infection of the food-supply.

In more marked obstruction the freeing of the anchored bowel by the careful separation from it and from its mesentery of the evolutionary bands, and the accurate covering by peritoneum of any raw surface which may be left as the result of such separation, restore the structure and mobility of this portion of the bowel to the condition which existed at birth and permits of the free passage of material through the liberated loop. The results of such a simple proceeding is very often extraordinarily striking, the sufferer being frequently restored to health and to the full enjoyment of life with wonderful rapidity.

In most cases this procedure can be effected if the surgeon is perfectly familiar with the arrangement of the bands, but in a certain proportion, owing to the extent of the acquired adhesions, it is difficult and in some few instances impossible to cover accurately any remaining raw area by peritoneum. When this is the case the bowel is very liable to become fixed again by inflammatory adhesions to the floor of the iliac fossa, and in consequence does not function properly.

When the obstruction to the passage of the intestinal contents is not due to acquired bands, but to an extreme elongation of the lower segment of the bowel, such disability can only be met by dividing the ileum and introducing it into the side of the pelvic colon or by means of a colectomy. As the elongation and prolapse of the rest of the gastro-intestinal tract occurs in the feeble subject and is consequent upon the obstruction in the end of the drainage scheme formed by the very elongated and tortuous termination, to hope to remedy this condition of so-called visceroptosis by sewing up the prolapsed and dilated viscera is obviously futile, since the elongation of the pelvic colon which is the cause of the accumulation of material with its consequences must remain. I do not propose to discuss here the treatment of the ulceration of the gastro-intestinal tract and the other conditions which result from the presence of the first and last kink, but wish merely to call your attention to the enormous importance of recognising the causal relationship of all the troubles in the proximal bowel and of the deadly and far-reaching results of the intestinal auto-intoxication necessarily associated with it.

In order to obviate the development of the changes I have described, the public must be taught the necessity of evacuating the large bowel three times a day. In the first instance, this can only be secured by correct diet and suitable exercise. When the condition of obstruction already exists artificial means must be employed in addition to diet, &c.

The time has come when the medical profession must study the whole question of chronic intestinal stasis thoroughly, and realising its importance must endeavour by educating the people in proper habits and diet to obviate this acquired state which may almost be regarded as the normal in civilisation.

In view of the generally acknowledged steady increase in the disease and death-rate produced directly and indirectly by stasis, I feel I cannot urge you too strongly to take the matter in hand in earnest and with the least possible delay.

NEW DISEASES FOR OLD.

BY SIR THOMAS HORDER, BART., M.D., F.R.C.P.

DISEASES have their natural histories just as races of men and of animals have theirs, and to note the rise and fall, and how the characters change from time to time, is an interesting study. No doubt a study fraught with possible practical value also, though the difficulties of the investigation are great. So great indeed that before we can hope to arrive at any helpful conclusions we shall have been compelled to steer between the rocks of so many fallacies that when we emerge it is rather uncertain if we are still pursuing a useful course. These fallacies are much more marked in relation to the diseases to which I am going to make reference to-day than they are in relation to some others of a simpler kind, concerning which the facts collected by the Ministry of Health cover most, if not all, of the questions at issue. There is the fallacy of altered nomenclature. There is the larger fallacy of the more accurate diagnosis that comes with added knowledge and more exact methods. And there are other fallacies.

It is not my purpose to deal with my subject statistically. I have therefore not availed myself of the ready help that is always afforded to any student working along these lines by my friend Sir George Newman. Nor shall I deal with diseases which are mainly epidemic and endemic in their incidence. For here, in spite of the researches of the epidemiologists, we are at present very much on the knees of the gods, who give us, it is true, new lamps for old, but do not always benefit us thereby; cholera and typhus have gone, small-pox is going, but influenza and encephalitis have appeared and are still hovering near in no decadent fashion.

I am going to content myself by a few references to some common diseases concerning which I have seen conspicuous changes during the past 25 years, and ask you to consider with me what these changes may mean and what lessons we can possibly learn from them. It does not follow, of course, that you have seen similar changes in your country; if not, so much the more chance is there of our discovering the causes, since we may strike certain differential factors that will go far to explain them.

I.—Certain diseases have become much less common; in some of these the explanation is not difficult to find, in others it is not easy. The fall in the incidence of such diseases as diphtheria, typhoid fever, erysipelas, hydrophobia, anthrax, and glanders—to name a few only in this group—is doubtless a testimony to the ceaseless energy of the Ministry of Health and of its army of medical officers. The comparative rarity of lead poisoning and of several other industrial diseases may be reasonably attributed to the sound operation of the Factory Acts. It is fair to assume that the infrequent appearance nowadays of hydatid disease and of some allied parasitic conditions is the result of greater cleanliness in the preparation of foodstuffs for the market and more thorough inspection at the large centres of distribution.

There are some diseases whose relative infrequency to-day may be attributed to a betterment of the general conditions of life and changes for good in the habits of the people. Some forms of tuberculosis come into this category and rickets in all probability also. It has been suggested that the disappearance of chlorosis both from the out-patient rooms of the hospitals and from private practice is explicable in the same way, though here we must exercise caution lest we omit some unknown factor, seeing that we were never very certain of the main ætiological elements in this condition when it was a very common disease. Acute articular gout seems to be much less frequent now than formerly, though whether this is due to our drinking less alcohol, or to drinking different alcoholic beverages from our fathers, is not clear. Writing as late as 1920, McCrae states that gout appeared to be on the increase in the United States, but perhaps the Amendment XV. to the Constitution had not yet had time to assert a beneficent influence in this matter.

II.—Turning to the opposite side of the picture, we find very rife amongst us a series of disease-processes which lack the precision of some of those which I have just named, and for this very reason are all the more baffling when we come to consider their complex ætiology. I say complex because that seems to me the one clear fact about them when we regard them from the viewpoint of pathogenesis. In this sense they resemble our modern life itself, the dominant note of which, if it have one, is surely complexity. A feature that is common to all of them is the large element of functional disturbance that characterises them. In this series there come to be mentioned neurasthenia in all its forms; arterial hypertension with arterio-sclerosis in close attendance; enteroptosis; functional heart affections, with myocardial defects as accompaniments or sequels; hyperthyroidism and other endocrine disturbances; and in this same group we may place diabetes, since there is little doubt as to the definite increase in the incidence of this disease.

It may be urged that the reason why these names bulk more prominently in our nosological tables to-day than formerly is because our means of diagnosing them are better than they were a quarter of a century ago. But seeing that acceptance of this view of things means an acknowledgment that our own teachers were less astute clinicians than we ourselves are, I and any who were as fortunate as I was in this respect can scarcely subscribe to it. The more carefully we read the writings of the masters who immediately preceded us, and the more we recollect their words, the more certain it becomes that they were observers much too keen to miss these clinical pictures had they presented themselves with that frequency with which we see them to-day.

III.—And now I want to consider briefly another and quite different group of diseases in which, as it seems to me, changes have taken place over the period which I am considering. I refer to certain common diseases in which the factor of pyogenetic microbic infection is prominent. I spoke just now of the fall in incidence of typhoid fever and of erysipelas amongst other acute infections. These two diseases are caused by highly pathogenic members of the coliform and streptococcal groups of microbes respectively. At the same time that these particular infections have decreased there has been a notable increase in infections due to less pathogenic members of the same two groups of organisms. In the case of the coliform group we have watched the appearance of paratyphoid infections and, what is more significant, we have seen a large increase in infections due to colon bacilli or lactose-fermenting members of the coliform group. Many of these cases are subacute, and many are chronic. Infections of the urinary tract and of the gall-bladder have become very common. Of late years there are reasons to think that some bacteriæmias and diffuse intestinal infections, closely simulating paratyphoid, have been due to the colon bacillus, since expert bacteriologists have failed to obtain any other organism in the cultures from these cases or any serological evidence of typhoid or paratyphoid infection.

In the case of the streptococcus group of organisms a similar and no less striking change has been observed. The incidence of infections by *S. pyogenes* vel *hæmolyticus*, such as erysipelas, puerperal septicæmia, &c., has diminished. But we have in place of these a large increase in infections by the salivary and fæcal types of streptococci—i.e., *S. viridans*, many of them subacute and many of them chronic. The increase in the cases of bacterial endocarditis, nearly all of them subacute and associated with these feebly pathogenic strains of streptococci, is a notable example. Then there is the large group of cases of what we conveniently term "focal sepsis," chronic infections for the most part of the periodontal membrane, the tonsils, the nasal sinuses, the respiratory and digestive tracts; most of these are due to these same saprophytic strains of streptococci. These cases have become a conspicuous feature in modern medicine. Even if we admit the possibility of our more expert methods of clinico-pathological diagnosis being responsible for many individual cases in this class, this does not account for the fact that the anatomical lesions, and the clinical pictures, were not observed with nearly the same frequency 20 years ago. Nor have there been any considerable changes in bacteriological technique in this connexion during the past 15 years.

IV.—It is interesting to speculate as to the meaning of this fall in incidence of the more highly pathogenic infections and the rise in incidence of infections caused by organisms more closely allied to, or actually identical with, the saprophytic organisms of the body. If we define a microbic disease as being the sum-total of the changes produced by the interaction of an infecting microbe and the body tissues we can co-relate these changes with differing grades of virulence on the part of the microbe and with differing degrees of resistance on the part of the tissues. And it has become the custom to speak of comparative degrees of virulence of the organism and of comparative degrees of resistance of the host as the basis of any discussion of the varying course taken by diseases of microbic origin. Nor have we any more helpful hypothesis at present. Now there is no evidence for regarding the fall in incidence of the more pathogenic infections as being due to an increase in resistance on the part of the host; the evidence all goes to show that the fall has been due to those preventive measures already referred to. Nor is there any evidence for considering the increase in focal sepsis and in subinfections generally as being due to an increase in the virulence of the causative organisms; the streptococci obtained by blood culture in cases of septic endocarditis, for example, do not kill mice—a recognised test of pathogenicity in the case of streptococci. It follows, therefore, that we have good reason to regard these saprophytic infections as resulting from lowered tissue resistance. The question arises: Are we becoming more and more the prey to our own saprophytes? And if so, why? To the first question

I incline to answer, Yes. To the second question I have no answer, and yet I would like to suggest a possible answer.

Looked at from the viewpoint of disease, the conditions of modern life have probably in every respect save one tended to eliminate diseases or to render diseases less harmful. But this exception is a very significant one; the nervous and emotional strain of living has undergone a very great increase during the past two decades, and I cannot help feeling that it is perhaps in this direction we must look for the explanation of the facts I have stated, if facts they be. Consideration of exactly how it transpires that nerve strain tends so to lower tissue resistance as to render the body more prone to subinfection by saprophytic organisms and cause these infections to persist would cause me seriously to transgress the time at my disposal. But there is one point I should like to mention. Lowered resistance to microbic infection is usually regarded as being due to an ill-defined change in the patient's general state, for which we use rather meaningless expressions such as being "run down." The question I wish to raise is whether the central nervous system may not have some more definite and direct bearing upon infection, or rather upon immunity, than has hitherto been thought likely. The function of immunity is one of enormous value in the preservation of health and of life; its mechanism is also, as we know, one of a very elaborate kind. Is it not improbable that so vital and so complex a function as the protection of the body from microbic invasion and conquest should have been left, in the course of evolution of nerve control, without appropriate provision, even if it have not, as have so many other important functions, its special "nerve centre"?

Be this as it may—and the problem must be left pending exact observation and experiment—I do suggest that the influence of the nervous system upon the way we receive and respond to bacterial infection has been too little regarded, and should receive more attention.

I think that our experience of those few tense years of the Great War confirms the view that nerve stress and strain constitute a serious ætiological factor in the prevalence of microbic subinfections. For this period was followed directly, not only by a large number of cases of neurasthenia, of endocrine disturbances, and of cardiac derangements, but also by a great many cases of infection of the type we are accustomed to associate with lowered resistance. There were the cases of pulmonary tuberculosis of an insidious and smouldering type which we had not previously seen in any numbers. More pertinent to my previous remarks, there were a considerable number of cases of insidious endocardial infection by streptococci of a low grade of pathogenicity. These cases have been under very skilled observation during the past decade. In a good many of the patients the aortic cusps were infected and yet there has been no evidence of previous damage by rheumatism, syphilis, gonorrhœa, or even trench fever. But for the knowledge that these men had undergone a period of intense nerve strain we should be wholly without an adequate explanation of their slow submission to invasion by the saprophytic cocci of their own mouth or intestine. And do not the conditions which constituted a factor in pathogenesis of great importance during those few fateful years give us a clue to the problem of which I have been speaking? Did not the war achieve in a concentrated fashion what the conditions of twentieth-century life are tending to achieve, more slowly, but with equal surety, in those in whom the direct strain of war service has not operated?

If there be any truth in all this, what is the line that therapeusis should take in regard to these morbid processes? The answer seems unavoidable: That we must concentrate more upon the means of raising general resistance and especially of raising nerve tone. Perhaps we are still focusing our efforts too much upon the bacteriological part of the problem; I incline to think that we are. The response to specific inoculation, for example, in many of the cases of subinfection of which I have been speaking, *pace* certain immunisators who still retain their enthusiasm, is certainly disappointing. To instance the type-case once more: No amount of bacterio-therapy, however carefully devised and ingeniously carried out, has thus far served to change the dogged course of infective endocarditis, nor to avert the almost certain tissue. Nor does chemo-therapy to-day offer any better hope. Indeed, if we treat these patients on much the same lines as we have for many years now been treating patients suffering from pulmonary tuberculosis, give them open air by day and by night, sunlight, ample and good food, and general tonic measures—aiming by non-specific means to raise their general resistance—the response, meagre though it still is, is on the whole better than is obtained by the most up-to-date programme of bacterio-therapy. But it is clearly in the realm of prophylaxis that we must work if we want to get results, rather than in that of curative treatment, though less lethal diseases than the one just cited, but also illustrating the same point, give us better opportunities of help in regard to curative measures also.

On the basis of these remarks, whether we consider the group of modern diseases of functional type to which I made earlier reference, or whether we regard these cases of microbic subinfection with which I have dealt rather more fully, the moral is one and the same; we ought to do our best to induce our patients to return to a simpler life. We must not only point out more and more clearly and insistently the importance of hygienic rules for the conduct of the bodily functions, but in the sphere of the intellect, and especially of the emotions, we must preach moderation and simplicity. It is difficult for any clear-thinking doctor to avoid the conclusion that the hustle of modern life, the pace at which we go, the nerve strain involved, and the expense of spirit entailed, have become a large factor in the incidence of disease, and of diseases of a different type from many with which we were formerly acquainted. We have new diseases for old, but the doctor's function remains the same: to study closely his patient and to husband and to exploit to the best end all his resources. As a fellow student and as a colleague, I offer you these few remarks for your indulgent criticism.

ADDISON'S ANÆMIA AND SUBACUTE COMBINED DEGENERATION OF THE SPINAL CORD.

BY ARTHUR F. HURST, M.D.

THOSE of us who have the good fortune to be attached to one of the older hospitals of London have the inestimable advantage of doing our daily work in surroundings hallowed by a great tradition. There would be something lacking in the imagination of a man who is not stimulated by working in a hospital like Guy's, in which Astley Cooper and Hodgkin, Addison and Bright, Gull and Wilks, have made their epoch-making discoveries. I like to think that it is the spirit of Thomas Addison still pervading the hospital in which he laboured a century ago that has urged successive generations of Guy's physicians to interest themselves particularly in the disease of the suprarenal glands which bears his name, and in the form of anæmia, badly called pernicious, which he was the first to describe.

During the 18 years I have been on the staff of Guy's Hospital my male beds have been in the ward named after this great physician. It seems to me appropriate that in the short time at my disposal to-day I should give you a summary of the investigations carried out during the past five years by my

colleagues and myself on Addisonian anæmia and the spinal degeneration with which it is so often associated.

In 85 per cent. of cases of Addison's anæmia symptoms or signs of nervous disorders develop, and the changes in the spinal cord upon which they depend are identical with those present in subacute combined degeneration. In the latter disease evidence of Addison's anæmia is always present sooner or later, and there can be no doubt that the anæmia and spinal cord degeneration are simply manifestations of the same infection.

This infection begins in the mouth in the form of pyorrhœa or some other streptococcal condition. Normally the free hydrochloric acid of the gastric juice makes a very efficient antiseptic barrier, which prevents bacteria, and especially streptococci, which reach the stomach from the mouth from gaining access to the duodenum. In every case of Addison's anæmia complete achlorhydria is present, and we have found that the same is true in subacute combined degeneration of the cord. This achlorhydria is an essential predisposing factor; it is not a result of the disease, as in several cases it is known to have existed ten or more years before the onset of the anæmia. It is generally constitutional in origin and often familial, thus explaining why Addison's anæmia may occur in several members of a family or subacute combined degeneration in one and Addison's anæmia in others. It is occasionally acquired, as in the cases which follow the alcoholic gastritis associated with cirrhosis of the liver, and the acute cases both of true Addison's anæmia and of subacute combined degeneration which follow the achylia caused by a growth of the stomach or the artificial achlorhydria following gastro-enterostomy or total gastrectomy.

My colleague, F. A. Knott, has isolated a hæmolytic streptococcus from the duodenal contents in a large number of cases of Addison's anæmia and combined degeneration of the cord, but it is very rarely found in any other condition, even if achlorhydria is present. Addison's anæmia and subacute combined degeneration are caused by a streptococcus which has invaded the small intestine from the mouth owing to the absence of free hydrochloric acid from the stomach and which has, in course of time, acquired certain specific characters. These are the production of blood and nerve toxins. The former leads to hæmolysis and at the same time acts on the bone-marrow, causing it to produce a large type of red cell which is found in no other condition except sprue and Bothriocephalus infection.

The neurotoxin causes subacute degeneration of the lateral and posterior columns of the spinal cords. In some cases the blood poison is produced alone; more commonly neurotoxin is also produced. In other cases the neurotoxin is predominant, and the patient complains of tingling in his feet and hands, and later of ataxic paraplegia, the anæmic symptoms being comparatively slight or only developing at a later stage. But even if no anæmia is present, and the hæmoglobin percentage is 100 or more, the characteristic megalocytosis is present.

The treatment of Addison's anæmia and subacute combined degeneration will become really satisfactory when the earliest manifestations are more frequently recognised. Thus, if the blood is examined for megalocytosis in every case in which achlorhydria is discovered during the routine examination of a patient suffering from digestive disorder, and when, in addition, a test-meal is given to patients with a characteristic sore tongue, or the paræsthesia, which is the earliest symptom of subacute combined degeneration of the cord, Addison's anæmia will be diagnosed before any anæmia has developed, and with adequate treatment its development will be prevented.

Every trace of oral sepsis should be eradicated, but this must be done slowly and only after preliminary vaccination, as otherwise a large dose of toxin is set free and absorbed locally, and may give rise to severe hæmolytic or neurotoxic crises. Hydrochloric acid is given in large doses. We find that 2 dr. three times a day are required; each dose is given in 8 to 10 oz. of water, to which the juice of an orange and some sugar are added to make a palatable drink. The first dose is taken fasting an hour before breakfast, when there is no alkaline food which can partially neutralise it; the others are taken as a beverage at lunch and dinner.

A culture of *B. acidophilus* is given three times a day apart from meals, and a tablespoonful of charcoal morning and evening. An autogenous vaccine, prepared from the hæmolytic streptococcus isolated from the duodenal contents, is injected in increasing doses. In intractable cases splenectomy may help to overcome the infection. The anæmia itself can be treated by arsenic, and, when necessary, by repeated transfusion, and the spinal symptoms by exercises.

It is futile to compare the relative merits of hydrochloric acid, arsenic, transfusion, and splenectomy in the treatment of Addison's anæmia. Each has its use. It is only by a combined attack on the infection and on the results of the toxæmia that the best results can be obtained. It should be remembered that the patient has permanent achylia, and is thus in permanent danger of reinfection and consequent relapse. He should, therefore, continue with his acid for the rest of his life, however well he may be, and he should have his hæmoglobin percentage estimated every six months. If it ever shows signs of falling, another thorough search for sources of infection in the mouth or throat should be undertaken, and active antiseptic treatment of the intestine should again be given.

By means such as these we may, I think, legitimately hope that the prognosis in Addison's anæmia, which has so long been regarded as invariably hopeless, will no longer justify the term pernicious.

WEDNESDAY, JUNE 3RD.

SOME ASPECTS OF RENAL DISEASE.

BY PROF. H. MACLEAN, M.D., D.SC., M.R.C.P.

SINCE the advent of biochemical methods designed to test the efficiency of the kidneys, our knowledge of renal disease has been considerably extended. Though much yet remains to be done in elucidating the ætiology and progress of various pathological renal conditions, it is now clear that, in the main, the subacute and chronic affections of the kidney may be divided into two great groups. In the first group the predominating feature is œdema—indeed, it may be the only apparent symptom. This œdema is frequently very extensive, and its general intensity and distribution at once point to the condition as one of *subacute hydræmic nephritis*. In such patients the urine, without exception, always contains a very large amount of protein. Indeed, œdema associated with a urine containing only a very small amount of protein generally has its source in some other organ than the kidney. In hydræmic nephritis of the pure type the only difficulty on the part of the kidney seems to be the excretion of salt and water; waste products are eliminated as readily as in health. Unfortunately, however, hydræmic nephritis tends frequently to progress towards a phase characterised by retention of waste products as well as œdema. At this stage the condition is practically the same as that found in *chronic interstitial nephritis*. The fact that hydræmic nephritis has such a marked tendency to pass on to what is practically the same condition as chronic interstitial nephritis is one of the main reasons why the text-book treatment of renal diseases is rather obscure, especially as regards classification. Sometimes hydræmic nephritis (the chronic parenchymatous nephritis of the text-books) is described more or less as if it were interstitial nephritis with œdema added on. If we remember that a true hydræmic nephritis tends to pass into a stage in which the symptoms ultimately become the same as those associated with chronic interstitial nephritis, it is

obvious that the exact symptoms present at any given time will depend entirely on the progress of the disease towards the chronic interstitial state at that particular time. A case beginning with typical hydræmic nephritis, and without any of the symptoms associated with chronic interstitial disease, may in a few months show all the symptoms (retention of nitrogenous waste products, excretion of a urine of low specific gravity, cardiovascular and eye changes, &c.) usually taken as characteristic of the chronic disease.

Diagnosis and Prognosis in Nephritis.

Hydræmic nephritis requires no skill in diagnosis; the extreme grade of œdema and ascites suggest an examination of the urine. Protein is found to be present in *very large amount* and granular and hyaline casts are also abundant. Though the diagnosis is easy, prognosis is extremely difficult, for though many of the cases recover, a large number, on the other hand, progress more or less rapidly to death by uræmia. The ultimate result in any such case depends on the nature of the primary lesion. When this is represented by a degeneration of the kidney cell and no definite inflammatory processes are present, the outlook is generally good. Unfortunately, it is impossible to say, in the light of our present knowledge, whether or not inflammation is present in the renal substance, and so prognosis must be based on other factors. A slight increase in blood pressure, especially in diastolic blood pressure, is a suggestive omen. The clinical condition, however, frequently affords little or no clue to the real state of matters, and it not infrequently happens that the use of renal tests show the outlook to be hopeless when the general condition and symptoms of the patient might appear to indicate quite satisfactory progress. This is especially the case at a certain stage of the transition from the hydræmic or water-logged phase to the phase of definite interstitial nephritis. At this stage the œdema frequently disappears, and the interstitial changes, being yet in their early stages, produce but little in the way of obvious symptom. The patient feels well, and, cheered by the disappearance of fluid from the tissue, the medical attendant may take a hopeful view. Often later events will prove that this view was totally unjustified, but no evidence to the contrary is offered by the clinicial symptoms alone. Renal tests, however, such as those about to be described, will always give the desired information. It cannot be too strongly emphasised that this information can be obtained only by testing the efficiency of the kidney, and the practitioner who relies on general examination of the patient in such cases, to the exclusion of the more useful renal tests, will be very frequently disappointed.

In chronic interstitial nephritis again, it is a notorious fact that the patient may have no objective symptoms and yet be on the verge of coma. He may not even have albuminuria to give a hint of the condition. It is by no means uncommon, on the other hand, to see a patient who for some time has been losing weight, but in whom physical examination fails to detect any real cause for his condition. Frequently, such patients are diagnosed as suffering from tuberculosis, more especially if a slight degree of bronchitis is present, but no tubercle bacilli are found in the sputum. Many of these patients, when examined by renal tests, show quite definitely the presence of severe inefficiency of the kidneys; in short, the condition is frequently one of chronic nephritis. Without renal tests it would, in such cases, be quite impossible to diagnose the condition by the usual physical examination. A patient whom I saw recently had just spent six months in a sanatorium under the impression that her general ill-health was due to tuberculosis. The real nature of the condition was at once elicited by tests of renal efficiency. Three weeks later she died in uræmia. It is probably not yet recognised by the medical profession at large that many ailing patients complaining of general weakness and lack of energy, but without symptoms pointing to any definite disease, are frequently the victims of renal deficiency. Many such cases have come under my notice.

While it is true that the first, and, in general, most important function of the medical man is to examine his patient very thoroughly by the simpler means at his disposal, and to exhaust this examination before applying laboratory tests, it is equally true that the stickler for "physical signs" alone, who is always decrying laboratory methods, is frequently incapable of making a correct diagnosis in that large group of cases in which physical signs are either wanting or, if present at all, are ill-defined, unreliable, and erratic. In no group of diseases is this more true than in renal conditions. It may be said at once that in this group accurate diagnosis and prognosis are frequently quite impossible without the use of modern tests. Even when it is obvious that renal disease is present, the degree to which renal activity is involved can in many cases be ascertained only by biochemical tests.

Physiological Basis of Modern Renal Tests.

The functions of the kidney are of various kinds, but the chief function is the excretion of the waste products of metabolism. Since the chief end-products normally excreted by the kidney are urea, uric acid, and creatinin, it follows that any condition interfering with their excretion will result in an accumulation of these bodies in the blood. Of these products, urea is the one most easily estimated, and it is now the practice in all well-equipped hospitals to estimate the blood-urea content in suspected renal cases. Normally, the amount present varies a good deal according to age and other factors, but it must be emphasised that the usual figure of 40 mgr. urea per 100 c.cm. blood as an outside limit is frequently much too low in the case of elderly individuals. Indeed, it is not very unusual to get 50 or even 60 mgr. per 100 c.cm. blood in aged people in whom the kidneys are apparently quite efficient for their age.

On the whole, perhaps, too much attention is paid to blood-urea content in renal disease. Taken by itself the amount of blood-urea present, unless the amount is very excessive, may signify very little. The most important rule to remember is that the blood-urea may be high with quite efficient kidneys. This may be dependent on extrarenal causes which need not be discussed here. Consideration of the blood-urea alone tells us very little about renal efficiency. In every case, however, in which high blood-urea is dependent on extrarenal causes *the urine contains a high percentage of urea.* In other words, a high blood-urea, when associated with a high percentage of urea in urine, does not signify that the kidneys are diseased. *With defective kidneys a high blood-urea is always associated with a low concentration of urea in the urine.*

With the exception of the condition discussed under hydræmic nephritis, it would appear that in nephritis all the excretory functions of the kidney are, on the whole, more or less correspondingly decreased, so that the estimation of any one waste body in the blood gives a clue as to the general efficiency of the organ. The easiest body to estimate is urea, but in order that the result should be of value it is necessary to remember the points just discussed. A high blood-urea per se is not necessarily an indication of defective kidneys.

From the point of view of the general practitioner, an elaborate laboratory investigation of renal function is out of the question. He has neither time nor the practice in laboratory manipulation necessary for the attainment of reliable results. In the great majority of cases, fortunately, no elaborate investigation is necessary. I am well aware that in America and on the continent very elaborate investigations are frequently carried out on patients suffering from renal disease. The collection of specimens of urine at varying intervals after certain definite meals, with a view to ascertaining the amount of solids present in the different specimens, is one method much in vogue. Also, the various modifications

of so-called water tests are extensively used. All these demand great care and attention both on the part of patient and doctor, and they are tedious to both. From time to time we have tried all these tests at St. Thomas's Hospital with the result that, in my opinion, no information whatever is to be derived from any of them beyond that which can be obtained by the simple *urea-concentration test*. This test can be carried out by any medical practitioner in a few minutes, and in the great majority of cases gives all the information that can be derived from the most elaborate methods. We have tested it in thousands of cases, and I may safely say that no information of any importance was ever afforded by any other test that was not equally well indicated by this simple one. The only other test that may sometimes be of value is the estimation of blood-urea.

Urea-Concentration Test.

This procedure is carried out as follows. The patient is told to abstain from fluid for 12 to 18 hours before the test. Generally, it is most convenient to have the test done in the morning; he is told to drink practically no fluid from lunch on the preceding day. The importance of abstaining from fluid is exceedingly great, for unless this is done the result may be misleading. When this simple precaution is taken, the test nearly always gives reliable results.

Supposing the patient has had no fluid for 14 hours and he appears for the test at 10 in the morning, the following represents the exact procedure.

10 A.M.—Patient empties his bladder. Specimen kept for analysis. Immediately afterwards he receives 15 g. of urea dissolved in 2 to 3 oz. of water.

11 A.M.—Patient empties his bladder. Specimen (labelled No. 1) kept for analysis.

12 noon.—Patient empties his bladder. Specimen (labelled No. 2) kept for analysis.

The test depends on the fact that in the absence of excessive fluid in the system, efficient kidneys will get rid of the ingested urea by passing a concentrated urine in which the percentage of urea will be high. Thus, a normal young adult will probably pass urine, containing 3 to 4 per cent. of urea or more, one hour after taking urea by mouth. On the other hand, the urine of a patient suffering from diseased kidneys may show a concentration of only 0·8 to 1 per cent. of urea or even less than this. Naturally, the exact figures found depend on various factors, but experience shows that, when tested in this way, an individual with fairly good kidneys will always pass a urine containing at least 2 per cent. urea.

Specimens of urine are taken at hourly intervals for two, or sometimes three hours, in order to avoid the possible results of the diuretic action of urea. Sometimes, in spite of the fact that little or no fluid has been taken for several hours beforehand, a comparatively large amount of urine is passed during the first hour after the ingestion of urea. This diuretic action of urea generally passes over within the first hour, so that the true concentrating power of the kidneys is frequently best indicated in the urine of the second or even third hour. The total amount of urine passed in one hour should not exceed 100 to 120 c.cm. If it is greater than this some allowance must be made, or the test must be repeated. It not infrequently happens that the specimen of urine passed by the patient immediately before taking the urea is highly concentrated as the result of abstention from liquid. If this is so, it is hardly necessary to proceed with any test, for it is obvious that the renal condition is good.

The very simplest modification of the urea test is therefore to get the patient to abstain from fluid for 14 to 20 hours, and to estimate the urea in the urine passed after this time. The actual estimation of urea can be done by the hypobromite method and requires only a few minutes. One of the most important points about the urea-concentration test is that the patient on receiving the necessary directions can carry it out in his own home. Done in this way it requires only about ten minutes altogether, as far as the medical man is concerned, and is therefore peculiarly suitable for the busy general practitioner.

This test, combined with examination of the urine for protein and such bodies as casts and red cells, will, in the great majority of cases, furnish very definite information as to the state of the renal function. In a few cases estimation of blood-urea is also helpful. In my experience, this simple method of procedure furnishes as much information from the clinical standpoint as it is possible to obtain by the more elaborate methods which take days if not weeks to carry out. It is so simple that no technical training in its application is required, and its more extensive use will undoubtedly render unnecessary many of the very elaborate methods at present in vogue.

ABSTRACT* OF REMARKS ON

GASTRO-JEJUNAL ULCER.

By A. J. WALTON, F.R.C.S.ENG.

Mr. A. J. Walton commenced by pointing out that although gastro-enterostomy has been performed for the treatment of gastric ulcers for nearly 45 years, doubt was still cast upon its value by the fear of a later onset of gastro-jejunal ulcer. Some surgeons thought this fear exaggerated, and others advocated more severe operations to avoid what they regarded as a common complication. This, he said, made accurate determination of its frequency necessary, and, quoting many authorities and their figures, he showed that among surgeons of wide experience there was remarkable unanimity in placing the frequency between 1 and 2 per cent. There had come under his own care 20 cases of gastro-jejunal ulcer, upon 11 of which he had operated himself, the figure being arrived at by careful following up. These 11 occurred in a total of 783 gastric and duodenal ulcers subjected to operation. In 631 of these the operation was simple gastro-enterostomy, from which the danger of ulcer formation following this operation might be estimated, he said, at 1·7 per cent. Of the 11 cases only one occurred after a lesser curve ulcer, the lesion being relatively much less uncommon after duodenal and pyloric ulcers. Referring to some results already published by himself, he concluded that the operation of gastro-enterostomy must not be condemned because so small a percentage of patients might be left with the dangerous complication.

The lecturer went on to consider points in the ætiology and pathology of the condition which suggested methods of prevention, and to discuss the alternative procedures of gastro-duodenostomy and partial gastrectomy, the important question whether these ulcers can occur after operations other than gastro-enterostomy, and the close relationship between the amount of acid in this gastric juice and the incidence of gastric and duodenal ulceration. Mr. Walton laid stress on the importance of following up cases which have been operated upon, stating that by careful records it is then possible to get evidence of the ulcers in their earlier stages and so to prevent perforation. He detailed certain points in his personal method of operating and submitted to the meeting the following conclusions:—

(1) Gastro-jejunal ulcer is a relatively rare complication of gastric and duodenal ulcer occurring in a little over 2 per cent. (2) Its frequency does not warrant the introduction of extensive operations for the treatment of the primary condition. (3) It is almost entirely limited to pyloric and duodenal ulcers. (4) It occurs almost wholly in the male sex, and is found in those cases in which the gastric acidity is high. (5) As a general rule it is found when the acidity after the primary gastro-enterostomy persists, this being possibly due to an anatomical variation in the distribution of the oxyntic cells in the stomach. (6) The symptoms of this complication, although slight at first, nearly always commence

* Publication of the full address is reserved for a later issue.

immediately after the primary operation. (7) The frequency of the condition will probably be diminished by performing the anastomosis rather higher up than usual. (8) The treatment of the established condition should be by partial gastrectomy, which will be aided by placing the stoma rather more remote from the flexure than is usual at the first operation.

COMBATING VENEREAL DISEASE IN GREAT BRITAIN BY TREATMENT OF THE INFECTED.

BY COL. L. W. HARRISON, D.S.O., M.B., F.R.C.P.

[AFTER briefly sketching the history of the control of venereal diseases in England and Wales—the schemes of Scotland and Northern Ireland, he said, are on the same principle—the speaker continued :—]

In the accompanying table of statistics are a number of interesting facts from which one may gather some idea of those aspects of the scheme which are hopeful and those in which improvement is necessary The outstanding feature is the very great reduction in the number of new cases of syphilis which reported at the centres in 1924 as compared with the number in 1920, which was the peak year. As you see, in 1920 there were approximately 42,000 and in 1924 approximately 22,000.

Syphilis.

Section F of the table is an analysis of the cases of syphilis treated at St. Thomas's Hospital, showing that the average proportion of the new cases which were new infections was approximately 40 per cent. I judge from this that the centres treated approximately 17,000 new infections in 1920 and 9000 in 1924. Judging by the amount of arsenobenzol supplied to practitioners under the scheme, one would suggest that the treatment centres dealt with much more than half the cases, since the centres use more than five times as much arsenobenzol as is given to practitioners, and, altogether, I think it safe to say that the figures represent a true diminution in the number of persons who are being infected with syphilis. This impression is being strengthened by the experience of the clinics, at many of which the medical officers are commenting on the comparative rarity of cases of recent infection. Their work is mainly on cases of old-standing, who received little or no treatment before the establishment of the venereal diseases scheme and are now attending for late recurrences.

Dr. Douglas White has estimated that the army of syphilitics calculated by the Royal Commission to exist in England and Wales in 1914 must have been built up by increments of 50,000 fresh cases per annum during the preceding 33 years. It is impossible to believe that there are anything like this number of fresh infections a year now. When you consider also that before the establishment of the venereal diseases scheme the vast majority of the infected must have been left uncured and that to-day the proportion which received such thorough treatment that the serum reactions are left permanently negative is steadily increasing, it is reasonable to hope that, if an estimate of the number of syphilitics is taken 20 years hence it will disclose nothing like the proportion found by the Royal Commission. I will not go so far as to join the optimists in some other countries who boldly declare their belief that in ten years syphilis will practically have been eradicated, but I do think that in the diminution of syphilis alone we shall see results which will well justify the labour and expense of the venereal diseases scheme.

Gonorrhœa.

As to gonorrhœa, the figures are not striking. We estimate that there are about three infections with gonorrhœa to one with syphilis, and in my own centre I have found that, of the cases appearing for the first time, about 60 per cent. are instances of new infection. If this was true of all the new cases seen in the centres in 1920, about 24,000 new infections with gonorrhœa were treated at the centres and in 1924 about 19,000, while the proportion of new infections with syphilis to those with gonorrhœa which were treated at the centres in 1920 was as 1 to 1·4 and in 1924 1 to 2·1. Various factors may account for the difference in the two ratios, and it is impossible to say with any certainty if the decrease of approximately 9000 cases of gonorrhœa in 1924 as compared with 1920 was due to a diminution in the incidence of the disease or not. It is reasonable to suppose, however, that, thanks to propaganda, the general public now regards gonorrhœa much less lightly than it did, and, if this is the case, the 31,000 cases of 1924 represented a greater proportion of the infected than did the 42,000 of 1920. If this is true, the 1924 figures do mean a decrease in gonococcal infections.

The arrest in the spread of gonorrhœa by treatment is much more difficult than is that of syphilis, because there is no specific which will quickly render the patient non-infective, and success in this branch depends on the care with which the patient is treated in the late stages of the disease and the question of cure determined. More and more effort is being concentrated on this side of the question.

The number of centres providing facilities for intermediate treatment of gonorrhœa at hours which are convenient to patients is increasing steadily. By intermediate treatment we mean such treatment ordered by the doctor which can be given by, or under the supervision of, an attendant. For example, irrigation of males suffering from gonorrhœa and vaginal and cervical treatment of females. Also much more pains are now being taken by medical officers to make sure that the patient is really rid of infection than when the scheme was started. As the quality of the scheme improves so does the attendance of the patients, and although the new cases have decreased by approximately 33,000, or 30 per cent., attendances have increased by 156,901, or over 10 per cent.

Attendance and Defaulting.

Closely connected with the question of the average number of attendances is the percentage of defaulters. It is customary with those anxious to point out the failure of free treatment to quote the percentage of defaulters shown in the annual reports of the Ministry of Health. To anyone intimately connected with the various treatment centres, as I am, and who sees the returns rendered by the centres, as I do, it is clear that the annual reports show the case in its worst light. For example, a patient with gonorrhœa who ceases attendance before completion of treatment is counted as a defaulter and would appear to be a person who is still infective. But in very many cases treatment has been continued long after all evidence of the presence of the gonococcus has disappeared, because of some persisting urethritis which seemed to be in all probability due to a secondary infection. It is unlikely that any but a very small proportion of these patients spread disease.

Often, too, patients who have been returned as defaulters turn up later and explain that they have been attending some other centre, and, in a word, the really bad defaulting, that is, of the kind which leads to spread of disease, is much less than appears from the statistics. In support, I will quote from the statistics of my own centre which, in 1924, dealt with a number of new cases equal to one-fifteenth of the new cases dealt with by all the treatment centres in England and Wales. I mark as having ceased attendance before completion of treatment all cases which at their last attendance had received any treatment, even though the record may have shown bacteriological reports which were negative for gonococci for many weeks.

A syphilitic who has not received a course of ten injections of arsenobenzol and ten of bismuth or mercury is similarly classed as having ceased

attendance before receiving a course of treatment. My return for 1924 showed: Gonorrhœa cases which ceased attendance before completion of treatment, 13·02 per cent. of the cases of gonorrhœa. Syphilis cases which ceased attendance before receiving a course of treatment, 6·08 per cent. of all the cases of syphilis; and cases which ceased attendance after completion of one course but before all the treatment laid down in the programme for average cases (varying from 20 to 30 injections of each remedy, according to the nature of the case), 6·8 per cent. I doubt if those countries which have measures for searching out and punishing defaulters can show better results.

Although the tctal attendances have increased, and, with them, the work of the centres, the cost of the scheme has steadily diminished until in 1923–24 the estimate was £90,000 less than in 1920–21. The cost now works out at less than 2½*d.* per head of the population.

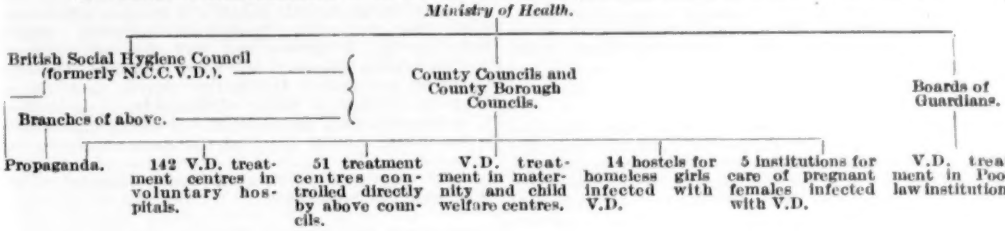
Directions for Improvement.

I have said enough to show that the venereal diseases scheme in this country is effecting the purpose for which it was set up. Thanks to propaganda the public is daily becoming more aware of the evil effects of venereal diseases and of the importance of thorough treatment. The quality of the work in the treatment centres improves year by year so that the percentage of cases rendered non-infective increases, and we have reason for hope that in the next few years we shall see a change in the situation, which will be obvious even to the most sceptical.

The lines on which we are anxious to see a marked improvement are:—Better facilities for the treatment of gonorrhœa and particularly for the intermediate treatment, that is, treatment which is carried out by or under the supervision of an attendant. It is daily, or almost daily, treatment, and to induce patients to avail themselves of it the hours at which it is available must be such as are most convenient to the patient.

Another line on which we hope to secure considerable improvement is in efforts to discover venereal disease in women and in methods of assuring their treatment. Often this must be carried out in some other place than at a treatment centre, and it is by no means always easy to arrange. Medical officers of health, however, are becoming more and more alive to the importance of this side of the question, and consequently more sympathetic to the idea of providing specially for the treatment of this class of patient.

A.—CHAIN OF RESPONSIBILITY IN ENGLAND AND WALES (SCOTTISH SCHEME ON THE SAME PLAN).


Ministry of Health.
British Social Hygiene Council (formerly N.C.C.V.D.).
Branches of above.
County Councils and County Borough Councils.
Boards of Guardians.
Propaganda.
142 V.D. treatment centres in voluntary hospitals.
51 treatment centres controlled directly by above councils.
V.D. treatment in maternity and child welfare centres.
14 hostels for homeless girls infected with V.D.
5 institutions for care of pregnant females infected with V.D.
V.D. treatment in Poor-law institutions.

B.—WORK OF TREATMENT CENTRES: ENGLAND AND WALES.

Year.	New cases of—				Attendances.
	Syphilis.	Gonorrhœa.	Soft chancre.	Non-venereal.	
1920 ..	42,805	40,284	2442	19,654	1,488,514
1924 ..	22,010	31,272	1098	18,842	1,645,415

C.—PROPORTIONS OF FEMALES TO MALES.

Year.	Syphilis.	Gonorrhœa.	Soft chancre.	Non-venereal.
1920	1 to 2·1	1 to 2·1	1 to 25·8	1 to 0·8
1924	1 to 1·7	1 to 4·2	1 to 51·3	1 to 1·8

D.—PROPORTIONS OF SYPHILIS TO GONORRHŒA.

	Males.	Females.
1920	1 to 1·2 ..	1 to 1·2
1924	1 to 1·8 ..	1 to 0·7

E.—COSTS.

	£		£
1920–21	470,000	1922–23	399,000
1921–22	452,000	1923–24	380,000

Approximately 82 per cent. for treatment centres; 12 per cent. for laboratory work; 1·5 per cent. for arsenobenzol supplied to practitioners; 2 per cent. for propaganda; and 2·5 per cent. for other services.

F.—STAGES OF SYPHILIS IN WHICH PATIENTS REPORTED.

As illustrating the growing tendency of the public to seek advice early, the following figures may be quoted:—

At St. Thomas's Hospital.	
During five years ending December, 1922, out of 3065 cases of—	In the year ending April 30th, 1923, out of 601 new cases of—
Syphilis in males there were—	
Primary .. 21·3 per cent.	25·9 per cent.
Secondary 20·4 ,,	14·8 ,,
Later .. 58·3 ,,	59·3 ,,

I fear that practitioners, who are of all people the most likely to discover evidence indicative of venereal disease in their female patients, too often miss the chance of preventing further congenital syphilis in the families which they attend, by ignoring the suggestion conveyed by a series of stillbirths and miscarriages and neglecting to urge on such patients the importance of being examined and, if necessary, treated. To me it seems deplorable that so many instances should occur of a woman giving birth to one syphilitic child after another and nobody responsible for the medical care of that woman having taken the step which would almost certainly put an end to the miserable equence.

Value of Propaganda.

Lastly, I would emphasise the importance of propaganda. Our difficulties are mainly bound up in the ignorance of the public. When they realise that no new *medical* discovery is necessary to put an end to venereal diseases and that all which is required is early and thorough treatment, we shall see the last of this scourge. It is not enough to leave the propaganda to societies. The word in season spoken by the individual goes far, and particularly so when it is spoken by the medical practitioner. The next generation of practitioners, who will be better educated in venereal disease than were their forbears, will speak the word, but why wait till then?

THE SPREAD OF CANCER OF THE RECTUM.

BY W. ERNEST MILES, F.R.C.S.

[After a brief description of the three clinical varieties of adeno-carcinoma, any of which might spread by direct extension through continuity of tissue, or by way of the venous or lymphatic systems, the speaker set out in some detail the anatomy of the lymphatics, in three groups, intramural, intermediary, and extramural. Dissemination by means of the extramural lymphatic system is more widespread and of much greater consequence than any other. The speaker continued:]

We may consider the extramural paths in three divisions, remembering that communications exist between them.

The Zone of Downward Spread.

The structures comprised in this zone are the perianal skin, the ischio-rectal fat, and the external sphincter muscle. Owing to the free intercommunication between the lymphatics of those structures and the efferents from the rectum, it is easy to understand how the progress of a detached cancer cell may be arrested at any point in that extensive network. It is also apparent that even an exhaustive microscopical examination of the structures above-mentioned might fail to detect such isolated cancer cells. Nevertheless, the presence of minute masses of cancer cells has been revealed in microscopical sections often enough to establish the fact beyond doubt that these structures are liable to be invaded during the process of dissemination. Additional evidence upon this point is forthcoming from clinical records in regard to post-operative recurrent growths.

In eight of my early operation cases in which a restricted type of perineal excision had been performed for primary growths situated at a distance varying from half an inch to four inches above the anal margin, recurrence took place in the perianal skin. I have also met with 16 instances of recurrent growths involving the perianal skin following perineal excisions performed by other surgeons. The perianal skin, therefore, must be regarded as being liable to involvement even in cases where the primary growth is situated in the upper part of the ampulla or as high as the recto-sigmoidal junction, and should be widely removed in every case of excision of the rectum for cancer.

I have seen post-operative recurrence in the ischio-rectal fat on 31 occasions. Seven of these followed my own perineal excisions, one occurred after an abdomino-perineal operation, and 23 followed perineal excisions performed by other surgeons. In addition to this evidence of the liability of this tissue to invasion by cancer cells, the microscope revealed the presence of a minute metastasis in the ischio-rectal fat in a specimen which I removed by my abdomino-perineal method. I have seen recurrent growths involving the external sphincter muscle upon four occasions, once after one of my own resection operations, twice after similar operations performed by other surgeons, and once after an abdomino-anal operation.

The Lateral Zone of Spread.

This area embraces the structures, the lymphatics of which enter into relation with the extensive lymphatic network between the levatores ani and the pelvic fascia. These structures are the levatores ani and the coccygei, the pelvic peritoneum, the prostate gland, the base of the bladder, the cervix uteri, and the base of the left broad ligament and the internal iliac glands.

The levatores ani are sometimes the seat of metastases. I have encountered such in the substance of the muscle close to its attachment to the rectum and also near the origin from the pelvic wall during the performance of excision operations, both primary and secondary. In one of the specimens which I removed by the abdomino-perineal method two separate plaques of growth were found in the substance of the left levator. These muscles are exceedingly prone to invasion by cancer cells, which gain access to the extramural lymphatics before the deep infiltration of the primary growth has had time to penetrate the muscular coat of the bowel, and they should, in all cases, be completely removed when a cancerous rectum is excised. I have observed plaque deposits in the peritoneum of the pelvic floor upon so many occasions that it would not be an exaggeration to say that there is not a portion of it, from the middle line to the brim of the true pelvis, that has not been implicated. This is, no doubt, due to the fact that the peritoneum in this locality is in close relationship with the extensive lymphatic network situated between the levatores ani and the pelvic fascia. A metastatic deposit in this network, therefore, speedily penetrates the pelvic fascia and extends into the overlying pelvic peritoneum. Accordingly it is essential that the peritoneum of the entire pelvic floor, as far as the brim of the true pelvis on both sides, should be removed in every case of extirpation of the cancerous rectum in which immunity from recurrence is hoped for.

The Upward Zone of Spread.

The tissues of this zone are the retrorectal (lowermost mesocolic) glands, the pelvic mesocolon in its entirety, the paracolic glands, the glands situated at the bifurcation of the left common iliac artery, and the median lumbar (aortic) glands. Since the majority of the efferent lymphatics which from the intramural lymphatic system either pass through or terminate in the structures contained in this zone, it follows that these structures constitute the principal paths by which cancer cells spread from primary growths in the rectum. In fact, this is the most constant and, therefore, the most important of all the routes of spread. We find either macroscopic or microscopic metastases scattered throughout the zone in practically all cases of cancer of the rectum, even when the growth is in an early stage of development.

In some instances the retrorectal glands are obviously enlarged and can be readily felt, but, in the majority, though the fresh specimen is carefully palpated, it is extremely difficult to be certain whether the glands are enlarged or not. Nevertheless, when these specimens have been hardened and dissected, the involvement of the glands is evident. Moreover, microscopic examination of the glands always shows one or more of them to be invaded by cancer cells. It sometimes happens that a gland may be free from deposit, although the tissues surrounding it are definitely invaded by cells. In such a case, if the glands alone were examined and found to be free from invasion, an erroneous conclusion as to the absence of extramural spread might be arrived at and a more hopeful prognosis, in regard to the possibility of recurrence taking place in adjacent structures, might be given than would be warranted had a more thorough examination been made. I have seen also carcinomatous deposits in this group of glands in a case of cancer situated at the middle of the loop of the pelvic colon, thus illustrating downward spread from that locality. The pelvic mesocolon, throughout its extent, is particularly liable to invasion. So often, indeed, is it found to be the seat of metastatic deposit that the removal of the whole of this structure in every operable case of cancer of the rectum is just as important as is thorough clearance of the axilla in breast cancer.

The part of the pelvic mesocolon which is invariably invaded is its parietal border, between the layers of which the superior hæmorrhoidal and the inferior mesenteric vessels are situated. The efferent lymphatics from the retrorectal glands accompany these vessels on their way to the glands located at the bifurcation of the left common iliac artery; and constitute the principal route by which cancer cells from the rectum are carried by the lymph stream.

At any point along this line metastases may occur, either singly or in chains.

As a rule the metastases can be felt distinctly as a chain of nodules situated in the parietal border of the pelvic mesocolon, extending as far upwards as the promontory of the sacrum. Sometimes they are too small to be palpated, and may escape detection until the tissues have been hardened and subjected to a careful dissection. Quite recently I felt obliged to abandon an abdomino-perineal operation on account of a chain of palpable metastases extending upwards along the inferior mesenteric vessels as far as the origin of that artery from the aorta. In this case there were no other visible metastases, either in the pelvic peritoneum or in the pelvic mesocolon, the primary growth involving not more than a third of the circumference, and again indicating that distant extramural spread occurs during an early phase of the disease. There is scarcely a part of the pelvic mesocolon in which, from time to time, I have not observed metastatic deposits, so that the whole of the structure must be regarded as highly dangerous tissue.

The paracolic glands, which are in series with the ano-rectal glands and are situated along the mesenteric border of the pelvic colon, are often the seat of metastatic deposit. The involvement of these glands does not proceed from one to the other seriatim as might be expected, for a continuous chain of affected glands is never seen. When a paracolic gland is found to be involved it is generally isolated, and may be situated at a considerable distance from the level of the primary growth. It is not uncommon to find an infected gland, several inches above the rectal growth, with no evidence of involvement of others of the same group. Instead of spread taking place from one paracolic gland to another, it is probable that the cancer cells first follow the course of the lymphatics accompanying the inferior mesenteric vessels and then, owing to blockage of the normal lymph stream by metastatic deposits, grow continuously or are carried by reversed flow along the lymphatic vessels of the pelvic mesocolon towards the colon to be arrested in one of the paracolic glands. When, therefore, the rectum, together with part of the pelvic colon, has been removed by a perineal method of excision it is quite possible that an infected paracolic gland, above the level of the point of section of the bowel, may have been left behind, despite the fact that a careful examination of all the paracolic glands contained in the specimen has failed to demonstrate evidence of infection. Even the extensive removal of the pelvic colon by means of the abdomino-perineal operation may sometimes fail to include an infected paracolic gland when situated many inches above the level of the primary growth.

There is ample evidence, then, that the dissemination of cancer cells by means of the extramural lymphatic system is more widespread and of much greater consequence than that which takes place in the intramural lymphatics. Moreover, it appears that, of the three zones of possible extramural spread, the upper zone is the most important, because secondary deposits are always present, visible to the naked eye, or discernible by the microscope. It occasionally happens that cancer cells are disseminated along the tissues of all three zones simultaneously. In one of my specimens the retrorectal glands were full of cancer cells, and in the pelvic mesocolon a large number of hyperplastic lymph-nodes existed along the course of the blood-vessels. Several of the paracolic glands were invaded by cancer cells. In the substance of the left levator ani muscle there were two nodes containing cancer cells, and a similarly infected node was found in the lymphatic plexus situated upon the upper surface of the muscle. In addition to these a minute metastasis was discovered in the ischio-rectal fat. This specimen is particularly interesting, because it illustrates invasion of the three zones of spread by a cancer which was still in such a clinically early stage of development that the direct extension of the primary growth through continuity of tissue had not involved the whole thickness of the wall of the bowel.

Conclusion.

As a result of (*a*) noting the position of metastases during the performance of operations; (*b*) observing the locality affected by recurrent growth either clinically or during the performance of secondary operations; (*c*) recording the extent and the position of metastases in cases in which proposed operations had been abandoned on account of their presence; (*d*) studying the post-mortem findings in regard to the spread of cancer in patients who had died from advanced and inoperable cancer; and (*e*) following the detailed examinations, macroscopic and microscopic, of specimens removed by operation, I have been able definitely to determine the tissues that are liable to metastatic deposit during the progress of the disease and to recurrence after restricted operations. These tissues are the ischio-rectal fat, the levatores ani muscles, the pelvic peritoneum, and the pelvic mesocolon, and they are directly concerned with the spread of cancer from the rectum. Pathology teaches us that they may be the seat of metastatic deposits even when the growth in the rectum is in a clinically early stage, and that unless these highly dangerous tissues are completely removed in every case in which an operation for the removal of the cancerous rectum is undertaken, post-operative recurrence will be a rule to which there will be few exceptions.

VISITS TO HOSPITALS.

THE members of the Assembly started at 2 P.M. on Tuesday, Wednesday, and Thursday to visit the various London hospitals, at which representatives had been appointed to provide a programme illustrative of the work of the institution. Tea was provided at the hospitals from 4 to 4.30, at which hour in many cases the programme came to an end, though at some of the larger centres on one or other day a lecture was given at 5 P.M. The number of visitors for whom accommodation was provided by the representatives varied from 12 to 50 from day to day at each institution, as well as with the size of the institution, the average number being 30.

St. Bartholomew's Hospital.—June 2nd: A lecture on Medical Education was given by Sir Holburt Waring at 2 o'clock, after which there were demonstrations on the Treatment of Exophthalmic Goitre complicated by Auricular Fibrillation, by Prof. F. R. Fraser and Mr. T. P. Dunhill, and on Bone Injuries (lantern demonstration), by Sir Charles Gordon-Watson. At 5 P.M. Dr. N. S. Finzi gave an X ray demonstration. June 3rd: At 2 o'clock Dr. H. Morley Fletcher gave an address on the Physicians of St. Bartholomew's Hospital, after which Dr. M. Donaldson described the technique of the treatment of carcinoma of the cervix with radium, Dr. R. G. Canti giving a histological demonstration. A demonstration by Sir Bernard Spilsbury on Criminal Pathology and a lecture on the Treatment of Diabetes, by Dr. George Graham, closed the programme. On both days visitors were invited to be present at operations by the surgical staff.

London Hospital.—June 3rd: At 2 P.M. Mr. E. W. Morris gave a lecture on the history of the hospital of which he is house governor, after which there was a demonstration of cardiac cases by Dr. John Parkinson. Other subjects brought forward were Temporary Application of a Band in the Treatment of Irreducible Spiral Fracture of the Bones of the Leg, by Sir Hugh Rigby; Intracranial Birth Injuries, their Modes of Origin, Prevention and Results, by Mr. Eardley Holland, and Methods of Determining the Efficiency of the Metabolism of Carbohydrates, by Dr. O. Leyton. June 4th: After Mr. Morris had concluded the second part of his lecture Lord Dawson of Penn, Dr. Russell Andrews, and Dr. Cecil Wall gave demonstrations of cases. Other communications were: On the Diagnosis of Intracranial Aneurysm,

by Dr. George Riddoch, and the Treatment of Acute Suppurative Arthritis, by Mr. James Driberg. As on Tuesday, visitors were invited to attend the operations by the surgical staff.

Westminster Hospital.—June 3rd: At 2 P.M. Sir James Purves-Stewart gave a lecture on Clinical Examination of Cerebro-Spinal Fluid, and after the visitors had witnessed a demonstration in the pathological laboratory Dr. de Souza lectured on Hormones in Disease. At the same time there was a lecture by Prof. Stanford Cade on Surgical Anæsthesia and a demonstration of the results of facial plastic surgery by Mr. G. C. Chubb. June 4th: At 2 P.M. a lantern lecture entitled a Pot-Pourri of Medicine was given by Mr. Hildred Carlill, and this was followed by demonstrations in the electrical and ophthalmic departments, after which Prof. Cade demonstrated the technique of regional anæsthesia and Mr. Rock Carling remedial exercises. Operations by the surgical staff were conducted each afternoon.

King's College Hospital.—June 2nd: At 2.30 P.M. a lecture on Breast Hyperplasia and its Relations to Malignant Disease was given by Sir Lenthal Cheatle, and various demonstrations took place at the same hour. At 3.15 P.M. there was a demonstration in the fracture clinic by Mr. St. J. D. Buxton. June 3rd: At 2 P.M. there was a series of general surgical as well as laryngological operations, and these were followed by a lecture on Coxa Vara, by Mr. H. A. T. Fairbank.

Charing Cross Hospital.—June 3rd: From 10 A.M. till 4 P.M. there was a series of operations and demonstrations by the staff. June 4th: A similar programme was provided from 2 P.M. to 4 P.M.

St. George's Hospital.—June 2nd: At 1 P.M. operations were performed by the staff. June 3rd: At 2 P.M. operations were continued, particularly on the nose, throat, and ear, and afterwards there was an exhibition of historical and other specimens by Dr. R. Donaldson. June 4th: At 1.30 P.M. there was a further series of operations.

Guy's Hospital.—June 2nd: From 2 P.M. to 4.30 P.M. there were demonstrations and operations by the staff with visits to the wards and the various departments of the hospital. Dr. C. P. Symonds conducted the neurological demonstrations, Dr. H. W. Barber the dermatological, and Dr. H. C. Cameron the pediatric. June 4th: At approximately the same hours a similar programme was provided.

St. Mary's Hospital.—June 2nd: At 2 P.M. a lecture was given by Sir William Willcox on the Investigation and Treatment of Cases of Arthritis, and later there were operations and demonstrations by the staff, Prof. F. Langmead giving a demonstration on Sanocrysin Treatment of Tuberculosis. June 4th: At 2 P.M. there was a lecture reviewing the Treatment of Exophthalmic Goitre with special reference to the Value of Measurements of the Basic Metabolic Rate, by Dr. C. M. Wilson, and at 5 P.M. a lecture on the Colon by Sir Arthur Keith. Between these two lectures operations were performed by the staff, and Sir Almroth Wright gave a pathological demonstration.

Middlesex Hospital.—June 2nd and June 3rd: At 2 P.M. and onwards there were operations and clinical demonstrations by the staff.

St. Thomas's Hospital.—June 2nd: At 2 P.M. there were operations and demonstrations, the nerve cases being demonstrated by Dr. Farquhar Buzzard. June 3rd: At 2 P.M. operations and demonstrations were continued, among the latter being Methods of Investigating Renal Patients, by Prof. H. MacLean. June 4th: At 2 P.M. general operations and operations on the throat were followed by demonstrations, a description of the Methods of Investigating Glycosuria and Diabetes being given by Prof. MacLean.

University College Hospital.—June 2nd: At 2 P.M. operations were performed, and at 2.30 P.M. Sir Thomas Lewis demonstrated in the cardiographic department. June 3rd: At 2 P.M. operations were followed by a demonstration of the Sanocrysin Treatment of Tuberculosis by Prof. T. R. Elliott. June 4th: At 2 P.M. there were further operations and demonstrations.

Royal Free Hospital.—June 3rd: From 9 A.M. to 3 P.M. there were demonstrations and operations by various members of the staff.

Prince of Wales's General Hospital.—June 2nd, 3rd, and 4th: At 2 P.M. demonstrations were given in the general and special departments.

West London Hospital.—June 2nd, 3rd, and 4th: At 2 P.M. there were demonstrations and operations by the staff.

London Temperance Hospital.—June 4th: From 1.45 P.M. operations were performed and demonstrations given by the staff and at 5.30 P.M. Mr. Herbert J. Paterson lectured on Cancer of the Stomach.

At the *London School of Hygiene and Tropical Medicine*, *St. Peter's Hospital for Stone*, the *National Heart Hospital*, the *Samaritan Free Hospital*, the *Chelsea Hospital for Women*, the *Royal London and Central London Ophthalmic Hospitals*, the *Hospital for Diseases of the Throat*, and the *Brompton Hospital for Consumption and Diseases of the Chest*, members of the staffs gave demonstrations on different days to illustrate the methods and practice of the institutions.

The authorities of the *Central London Throat, Nose, and Ear Hospital* gave a luncheon at the Carlton Hotel before the demonstrations and operations at the clinic, an example that was followed at the London Lock Hospital.

At *St. Mark's Hospital* a feature was made of demonstrations of barium enemata; at the *Cancer Hospital* Sir James Dundas-Grant lectured on Cancer of the Throat; demonstrations were also given at *St. John's Hospital for Diseases of the Skin*. At the *Radium Institute* demonstrations were given to the visitors in batches of four by Mr. Hayward Pinch and his staff.

At the *Hospital for Sick Children*, Great Ormond-street, ward clinics were held and demonstrations on selected medical, surgical, and dermatological cases given, and visitors were present at operations.

At the *Infants Hospital* Dr. Eric Pritchard dealt with the practical management of normal and complicated cases and lectured upon Artificial Feeding.

At the *National Hospital for the Paralysed and Epileptic* operations were performed and demonstrations given by the staff, and clinical lectures by Dr. F. M. R. Walshe and Dr. Hinds Howell.

Queen Charlotte's Hospital.—There were clinical visits to the wards and a pathological demonstration on Injuries to the Fœtal Skull, by Mr. L. G. Phillips.

COMMERCIAL EXHIBIT.

An exhibition of surgical instruments and medical products, organised by the Surgical Instrument Manufacturers Association, was held in the rooms of the Medical Society of London. The following firms exhibited surgical instruments: Messrs. Allen and Hanburys, Ltd., 37, Lombard-street, E.C. 3; Messrs. Arnold and Sons, Ltd., 50, Wigmore-street, W. 1; Messrs. Down Bros., Ltd., 21, St. Thomas's-street, S.E. 1; Messrs. J. Gardner and Son, 32, Forrest-road, Edinburgh; Messrs. Mayer and Phelps, 59, New Cavendish-street, W. 1; Messrs. Weiss and Son, Ltd., 287, Oxford-street, W. 1.

British chemical and medical products were shown by British Drug Houses, Ltd., Graham-street, City-road, N. 1; Crookes Laboratories, 22, Chenies-street, W.C. 1; Mr. W. H. Martindale, 10, New Cavendish-street, W. 1.

Sir John Bland-Sutton will open the enlarged building of the East Surrey Hospital at Redhill on Friday, June 19th, at 4.30 P.M.

THE BATEMAN APPEAL.

As already explained in THE LANCET, it has been felt that material assistance ought to be offered to Dr. Bateman to meet the legal expenses of his successful appeal and to make good the deficiency in his professional income. Accordingly the Bateman Fund has been opened and lists of contributions have appeared in recent issues. We have received additional contributions as follows:—

	£	s.	d.
Already received and acknowledged ..	458	4	0
G. W. Dawson, Esq.	2	2	0
M. S. Barfield	2	0	0
A. Graham-Stewart. (Third contribution.)	1	1	0
Anon...	1	1	0
Anonymous	1	0	0
H. E. Hargreaves	0	10	0
	465	18	0

Remittances should be forwarded to the Manager of THE LANCET, 423, Strand, W.C. 2, and made payable to the "Bateman Fund Account."

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Mental Deficiency Bill.

ON Monday, May 25th, the Mental Deficiency Amendment Bill, a measure to amend Section 7 of the Mental Deficiency Act, 1913, for the purpose of enabling a defective to be removed from an institution for the purpose of being placed under guardianship, was read a third time. On Tuesday, May 26th, the Bill was read a first time in the House of Lords.

Whitsuntide Adjournment.

The House of Lords adjourned for Whitsuntide on Thursday, May 28th, until June 16th. The House of Commons adjourned on the same day until June 9th.

HOUSE OF COMMONS.

TUESDAY, MAY 26TH.

THE PENSIONS MEDICAL SERVICES.

The House went into Committee of Supply on a vote of £41,026,000 for the salaries and expenses of the Ministry of Pensions, Mr. JAMES HOPE, Chairman of Committees, in the chair.

Major TRYON (Minister of Pensions) said that the estimated expenditure for the year 1925–26 amounted to £66,026,000, or the largest vote for any single department. It represented a decrease of about £2,858,000, or 4 per cent., on the expenditure of the previous year. The largest decrease was in the items of administration and medical expenses, which showed a total fall of 16 per cent. The cost of the medical treatment and services would, he estimated, amount to £2,847,000 for the year, compared with £3,559,000 last year. Medical treatment was naturally a declining quantity, because apart from chronic cases disabilities were inevitably and to an increasing extent reaching a condition of stability where normally no further treatment was likely to be wanted. The death-rate among disabled men remained fairly stationary at about 13 per 1000 annually, or about the same as the general population. With regard to the question of final awards, the right hon. gentleman said that the fixing of these awards did not necessarily mean that the man had wholly recovered from the injury or ailment, nor that he was in such a condition that there might not be some slight fluctuation up or down, but it did mean that a condition of normality had in medical judgment been reached. The Ministry took the very highest professional medical advice in regard to each kind of disablement before making final awards. A final award of 20 per cent. or over carried a life pension at the rate fixed. In dealing with many hundreds of thousands of cases a mistake here and there must occur, and he had taken steps to correct such cases of error. A man who found that he was worse would naturally apply for medical treatment and that treatment became the medium through which error, if there was any, was disclosed. In medical language either the diagnosis of the case might have been seriously faulty, or the prognosis of the case might have been wrong. Where either of these errors was discovered and the case was seen to have involved a serious underestimate of the normal extent of the man's disablement as a permanent matter he was able to recommend the case for further compensation under special sanction.

Mr. F. O. ROBERTS (the Pensions Minister in the late Labour Government) moved to reduce the vote by £100. He said that there was a demand for a revision and consolidation of the existing pensions regulations and he thought a Select Committee would be able to deal with all the points in connexion with these subjects. He hoped that the Minister would be able to set up such a Committee.

Mr. IAN MACPHERSON said that during three years no less than £55,000,000 was spent in medical treatment. The taxpayer was entitled to expect a return for that large amount of money and the taxpayer expected to see a reduction in the cost of these services. He did not approve of the appointment of a Select Committee. It was not the proper body for an adventure of this kind, because it was admitted that it was only a question of 20 per cent. of doubtful cases. What was the Select Committee going to do? Was it going to select other doctors to decide these cases? Every single man on a Select Committee would be predisposed to a certain line of action.

Lieut.-Commander ASTBURY referred to criticisms of the Pensions Ministry administration which he had made at question time and said that those criticisms were based on a statement which had been made to him by a medical man of standing in the Ministry, and that if the Minister would give him a letter guaranteeing that no proceedings would be taken against the man for giving the information he would give all the help he could. The Minister did not see his way to give him that letter. Now, however, his hands were to a certain extent untied because since December last this medical man had received notice to terminate his engagement with the Ministry at the end of this month, and he would be perfectly prepared if his statements were challenged to come to the House and tell hon. Members the things which he was prepared to prove. This was the statement made to him by this medical man: "Although the late Ministry of Pensions have definitely stated that no medical officer who had not seen a case would be permitted to change the amount of the award, it is the practice in some regions, notably at Burton Court, and at Manchester, for the R.A.O. to send for an assessor who has failed to reduce the required percentage of assessments during the preceding week. If, after being warned, the assessor still fails to produce the required weekly quota of reduced assessments, his services are dispensed with. As all assessors are paid on a sessional basis, they may be quietly dropped by the R.A.O. or a week's notice will terminate their agreement."

Major COHEN said that the British Legion had 3000 cases of men who could not get any benefit at all. Their contention was that if a man got a final award of under 20 per cent. and then became worse he should be entitled to make an appeal on the strength of a medical certificate signed by a qualified practitioner or by two or three practitioners. The main point was that it should be a civilian practitioner, and not one of the Ministry's doctors. He had nothing to say against those doctors, but there was no doubt that a man looked after the interests of his master, and if he was working for the Ministry of Pensions a doctor was entitled to consider the Ministry, unconsciously perhaps, more than he considered the pensioner.

Lieut.-Colonel STANLEY (Parliamentary Secretary to the Ministry of Pensions), replying to Lieut.-Commander ASTBURY, said that it was impossible for the Minister to give the undertaking asked for in regard to this medical man. If he was a man of standing in the Ministry, and knew that something directly contrary to the instructions of the Ministry was being carried out by someone in the Ministry, then it was his duty to report the fact himself and to see that it was dealt with. If he did not do so he was obviously unfit to remain in his position. If, on the other hand, he made a statement against his colleagues which was incorrect, what would be the situation in the Ministry if he were continued in his position?

Lieut.-Commander ASTBURY said that his informant was a medical man who had served in the Ministry, and had been a member of the travelling board of the pensions appeal tribunal for the last three years.

Lieut.-Colonel STANLEY said the simple fact was that this man was not an official of the Ministry. The hon. Member would not tell them who he was, and so the Minister had been forced to make inquiries for himself in the North-West Region from the regional director and the regional awards officers, who strenuously denied that any such instructions had been issued, or that any such procedure had taken place. They went further and inquired from every one of the medical assessors, and every one of them strenuously denied it. Some of them made pungent remarks with regard to the speech of the hon. Member.

Lieut.-Commander ASTBURY said these assessors were sessional men, and their engagements with the Ministry could be terminated with one month's notice, and they dared not open their mouths because they had their livings to make.

Lieut.-Colonel STANLEY said that was not the case. He was nearly as certain as he could be that no whole-time doctor under the Ministry got less than six months' notice. The Ministry were bound to accept the denials of these ten men.

Lieut.-Commander ASTBURY said that he would give the name of his informant now that he had been dismissed. He was Major Brasher, who was not only one of the most respected men, but one of the finest men who ever sat on a pensions appeal tribunal. The reason why he did not tell the hon. and gallant Member that he was a member of the pensions tribunal was because within a very short time they might have got to know who the man was who had given the information.

Medical Work of the Ministry.

Lieut.-Colonel STANLEY said he could not understand why the hon. Member should object to the Ministry knowing when it was not one of their officials. Proceeding to deal with the medical side of the Ministry's work the hon. gentleman said it was one of the pivotal branches of the pensions administration. Broadly speaking, it divided itself into two essentially different types of work. The first was the medical treatment of war disabilities, and the second was the examination and certification of pensioners and claimants. The medical and surgical branch of the Ministry had been one of the most wonderful achievements of the war. The medical profession had to mobilise all its resources and all its skill to grapple with the many problems arising out of the war. The way in which the medical profession met that demand would always be a lasting memorial to their skill and science. The policy had taken two forms: on the one hand, the Ministry had to provide special methods, and sometimes entirely new ones, for the treatment of cases caused by the war, and rarely known among the civil population. Also they had to provide accommodation for ordinary cases, so that the man who had been injured in the war should not have to wait for treatment. There was in-patient treatment, mainly in hospitals provided, owned, and controlled by the Ministry itself, but partly also in hospitals provided by voluntary contributions, and to a less extent in the ordinary civil hospitals of the country. Alongside the hospital accommodation, the in-patient treatment, had been the out-patient provision at the clinics of the Ministry. At one time the Ministry had as many as 113 hospitals and 650 clinics, and at the time when they were instituted they were an entirely new feature of public medicine. As treatment inevitably was most needed in the case of wounds and injuries—he thought that something like four out of every ten were cases of wound or injury—it was seen at a very early date that there was overwhelming necessity for supplementing both the military and civil hospital accommodation for the treatment of men who had been discharged for injuries, and this treatment did not stop short, as it did so often in the case of civil hospitals, at operative or other immediate treatment, because the medical branch of the Ministry aimed at something further than that and decided to include the whole range of orthopædic treatment. That meant the establishment of massage and electrical treatment, and also the provision of curative workshops attached to the surgical hospitals at which the more severe cases by exercising the injured limb could recover as fully as possible the use of that limb. The Ministry were running, not in addition to their hospitals, but included in the 113 hospitals he had mentioned, 15 orthopædic hospitals of their own and 60 clinics at which supplementary orthopædic treatment was given. This class of case had on the whole yielded better results than almost any other. In the course of nature these numbers were diminishing, and at the present time the Ministry was operating eight hospitals for this purpose, and 44 clinics where massage and other forms of treatment were given.

One of the most difficult classes of case were the neurasthenia cases. As regards those men who had lost their reason, they had to be shut up in county asylums according to the law. But the State saw to it that they were treated as private patients. Although it had been argued that the Ministry should itself have supplied the asylums to which these men could have been sent, he thought that there were very cogent arguments against that course. In the first place, there was the difficulty of the sub-division of the hospitals, but a much stronger reason was that the relatives of the men strongly objected to them being removed to any distance from their homes. There was a good deal of confusion between what was called neurasthenia and mental disease. Successive Ministers of Pensions, on the advice of their medical experts inside and outside the Ministry, had paid special attention to cases of nervous and mental trouble, and no expense or pains had been spared to get a man back to the normal condition. But one of the things upon which the experts were, he thought, all agreed was that the best cure for any case like that was to get a man back to his normal life and occupation as soon as possible. The great danger was that they might turn a man unnecessarily into a case that had to be certified. The Ministry had had in the past 20 neurological hospitals and 48 clinics for this purpose. The difficulty was that the Ministry had to draw very largely on those members of the medical profession who had given special study to this particular disease, and in addition they had had to train a large number of specialists of their own in order to grapple with the cases. On the whole they had been very successful, and a large number of men had been taken in time and restored to their normal condition. On the other hand, they had some cases of very serious mental trouble and disorder. The Ministry went to extremes to prevent the necessity of certifying a man, and they had several establishments to deal with border-line cases. The largest one was at Ewell. They had two establishments for certified cases, one in the north and one in the south, where selected cases were sent by agreement with the medical officers of the Board of Control. It was early days to say whether the experiment was going to be a success or not, but certainly up to date it would not justify any considerable extension of its operation.

Treatment of Tuberculosis.

As regards tuberculosis, it had already been settled to deal with that question in conjunction with the Ministry of Health, and arrangements were made for training after a man had been through his ordinary course of sanatorium treatment. He feared that that had not been quite the success that it was hoped it would be. The Ministry had no power to retain a man against his will, but further efforts were being made in another direction in conjunction with the Ministry of Health and the Ministry of Labour to see that when a man was going to be discharged, after concluding his course of sanatorium treatment or training, the medical officer of health of the locality and the employment exchange manager were notified so that everything possible might be done to get the man a job, and, if necessary, some more suitable habitation. The Ministry were spending something like £2,000,000 a year on allowances to tuberculous men. As showing the tendency for the medical branch of the Ministry's work to decline the hon. gentleman said that the day census of March, 1922, gave 119,000 in-patients and out-patients. The day census of March, 1925, gave 40,600 cases only. The general policy had been to concentrate the men in the larger hospitals and to close the smaller ones. On the whole there was a reserve of from 10 to 15 per cent. in excess of the beds occupied at any time. The same applied to out-patient treatment. At the present time they had 505 clinics which practically served the purpose of the out-patient department of a hospital. In addition to general medical practitioners in attendance, there were also specialists and the Ministry still provided for home treatment. They had spent upwards of £60,000,000 in medical treatment alone, and there had been an average of 1,750,000 cases. He thought that was a very high achievement on the part of the medical branch of the Ministry.

Dr. DRUMMOND SHIELS hoped that the Government would accept the proposal for a select committee.

Major TRYON, replying to the debate, resisted the suggestion that a Select Committee should be set up to inquire into pensions administration, but promised that he and the Parliamentary Secretary would make a full inquiry into the whole question, and said they intended to make a tour of the country to see for themselves what was being done.

On a division, the motion to reduce the vote was defeated by 279 votes to 149.

WEDNESDAY, MAY 27TH.

OVERLAPPING IN LOCAL ADMINISTRATION.

Mr. SIDNEY WEBB moved:—"That, in view of the costly overlapping of services and duplication of establishments in the various branches of public provision for the children, the sick, the aged, and the unemployed able-bodied, and as a necessary preliminary to the much-needed revision of the grants in aid in relief of the burdens now pressing so heavily on local authorities and on industry, it is essential that any measure dealing with the Poor-law should be framed, generally, on the lines of the Report of the Committee of 1917 on the Transfer of Functions of Poor-law Authorities in England and Wales; and this House accordingly urges that the Bill which it is intended to prepare and circulate to the local authorities this autumn should at least provide for a complete absorption of the existing Poor-law authorities and their functions in the county, borough, and district councils." He said that there were at least 100,000 sick persons in workhouses and union infirmaries. There were also the municipal hospitals of which there were something like 1100 maintained out of the rates as compared with 700 20 years ago, and these provided 44,000 beds. Under the Public Act Health which authorised these hospitals there was no restriction as to

infectious disease; as a matter of fact they did treat a good many other cases and their cost was now something like £4,000,000 a year. There was overlapping between these two different classes of institution. A test was organised by the National Council for Social Service in 1922 in Reading and Halifax, and they found that out of 2046 cases in which boards of guardians were giving outdoor relief there were 161 in which help was also given by the maternity and child welfare service of the local authority. There were 35 cases in which the Poor-law authorities did not know that help was being simultaneously given in the form of school meals and 89 in which the Poor-law authority did not know that the unemployment benefit was being received at the same time. Boards of guardians had in 1911 very nearly 5000 medical officers costing in salaries and drugs just over £1,000,000. When the Insurance Act was passed introducing a scheme of medical attendance and drugs, which provided for practically the whole of the wage-earning population, the 5000 doctors did not diminish at all. Their number had since gone down by something like 150, but their salaries had gone up to £1,800,000. The expenditure of the local authorities which was now £1,000,000 a day would go on increasing, but any relief to the local taxpayer was out of the question, so long as they had the present overlapping and continuance of separate authorities each dealing with the same set of people and each clamouring for Government grants.

Dr. HADEN GUEST said he believed that on the medical side they would get quite unexpectedly good results from the abolition of the Poor-law. He wanted the medical profession to be free to use their enormous knowledge for the purpose of building up a very much healthier, better balanced, and better coördinated humanity than now existed. He spoke as a workman with an ideal, a very simple and straightforward ideal, held, he believed, by the majority of the members of his profession throughout the land. That ideal was to make science the servant of humanity and to make it go down to the depths of the life of our nation, and improve the existing conditions. At the present time it was not lack of knowledge which stood in the way of the physical improvement of children, men and women living in our cities. It certainly was not lack of sympathy or lack of money. What we did lack was simply order and the coördination of existing institutions. Our present civilisation was by no means stable. The chief danger with which we were menaced was not foreign competition, nor a future war, but that the morass of poverty in which our civilisation was foundered would rise and sap the vitality of our institutions. There was a very grave danger that the worst types of human beings grown and formed by the worst type of environment in the poorest possible parts of this country, of Europe, and of the rest of the world would gradually become the dominating factor. The human mind had a habit of turning away from things that were painful. It was too horrible to think of the suffering that went on, the mental and moral degradation, all to a large extent unnecessary. He did not believe that the existing authorities who administered the Poor-law, and the other social services, were actuated by any but the best motives; but they could not do the job. By a proper organisation of medical services they could probably diminish the amount of disease in the country by 25 per cent. By proper organisation of child life, by the medical care of it, they could go a long way to abolish the ordinary infectious diseases, such as measles and whooping-cough, which were not regarded as seriously as they should be.

Mr. NEVILLE CHAMBERLAIN (Minister of Health) said that if he accepted the motion on behalf of the Government that did not mean that he was in any way committed to the particular recommendations. Since the report of the Committee of seven years ago a good many things had happened. He thought that they should begin by transferring administrative functions without perhaps altering the present law. It was the intention of the Government to deal with this question at the first possible opportunity. As soon as he had the main ideas formulated in his mind he proposed to discuss them with local authorities, boards of guardians, and others concerned; to circulate a draft Bill, and to invite criticism and comments upon it, and finally to place before the House of Commons something that would embody the considered views of the Government and bring this long-needed, long-desired reform to a happy and successful conclusion.

The motion was agreed to.

Deaths from Small-pox in England and Wales.

Mr. TREVELYAN THOMSON asked the Minister of Health the average number of deaths due to small-pox in England and Wales, and the average number of deaths due to vaccination in each of the last ten decennial periods.—Sir KINGSLEY WOOD replied: The following are the required figures for the last seven decennial periods. Comparable figures are not available for the decennia prior to 1851–60.

Average Annual Deaths from Small-pox and Vaccination in England and Wales.

Year.	Small-pox.	Cow-pox and other effects of vaccination.
1851–60	4177	7
1861–70	3421	10
1871–80	5705	29
1881–90	1228	52
1891–1900	406	43
1901–10	429	19
1911–20	14	9

Refuse Dump at Little Britain.

Lieut.-Commander BURNEY asked the Minister of Health whether he was aware that London refuse was being dumped at Little Britain, in the county of Middlesex; was prejudicing the health of the inhabitants of Yiewsley; and, seeing that the local authorities of Yiewsley had no power under their by-laws to prevent this dumping, whether he was prepared to introduce a Bill during the present session taking power to safeguard the health of the public in this and similar cases.—Sir KINGSLEY WOOD replied: My right hon. friend is aware of the case mentioned by my hon. friend. The local council have adopted by-laws to prevent nuisances from dumping, and it is proposed to discuss the application of these by-laws with them. My right hon. friend cannot at present undertake to introduce legislation on the subject.

THURSDAY, MAY 28TH.

Forcible Feeding in Asylums and Prisons.

Colonel DAY asked the Home Secretary whether patients in lunatic asylums were still forcibly fed; how many were so fed in the year 1924; what was the maximum number of times any one patient was so fed; how many prisoners in His Majesty's prisons were forcibly fed in the year 1924; and would he give their names and the maximum number of times any one prisoner was so fed in 1924.—Sir W. JOYNSON-HICKS replied: As regards the earlier parts of the question which relate to patients in asylums, I must refer the hon. and gallant Member to the Minister of Health. The number of prisoners in prisons in England and Wales who were forcibly fed in 1924 was eight. There are objections to stating the names. The greatest number of times any one prisoner was forcibly fed was 570. This prisoner is a burglar who will not take food and has to be fed forcibly three times a day. His case is entirely exceptional.

Mentally Weak Prisoners.

Mr. RENNIE SMITH asked the Home Secretary what arrangements were made to deal with prisoners who are found to be of weak mentality but were not certifiable as insane or mentally defective; whether they were assembled together and, if so, at which prison; how many prisoners were so assembled and how many of them were under the age of 21; whether they were long-term or short-term prisoners; and in what respect the treatment they received differed from the treatment of the ordinary prisoners.—Sir W. JOYNSON-HICKS replied: Male prisoners who, although not certifiable as insane or mentally defective, are unfit for the ordinary discipline of a prison, are collected in four prisons; female prisoners in three prisons. Since July 1st, 1924, 91 males, seven of whom were under 21 years of age, have been transferred to the centres from other prisons. Four females were transferred, one of whom was under 21 years of age. All were serving sentences of three months' imprisonment or more. In addition, there were at the centres 50 males and 18 females of the same class. Of these, two males and one female were under 21 years of age. These also were serving sentences of three months or more. All such prisoners in these prisons are located together under special supervision. They are instructed in such work of an industrial character as they can perform, and Brabazon classes have been arranged for those who are unfit for ordinary prison work. Outdoor labour, gardening, &c., are carried on as far as possible. The prisoners are under the observation of the medical officers and of a selected staff, and special allowance is made by the officials for the inability of the prisoners to conform to prison discipline. The prisoners receive extra facilities for exercise.

New Housing Construction.

Mr. TREVELYAN THOMSON asked the Minister of Health the total number of houses sanctioned this year and also during the last month by his department for erection with State subsidy under the 1923 and 1924 Housing Acts

respectively.—Mr. NEVILLE CHAMBERLAIN replied: The total numbers of houses authorised from Jan. 1st to May 20th, 1925, are 35,822 under the Housing Act, 1923, and 41,942 under the Act of 1924. The latter figure includes 9000 houses which had previously been authorised under the Act of 1923. During the four weeks ended on May 20th the numbers authorised were 4706 under the Act of 1923 and 8377 under the Act of 1924, of which 3106 had previously been approved under the 1923 Act.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

Surg. Comdr. R. Hughes is placed on the Retd. List with the rank of Surg. Capt.

ROYAL ARMY MEDICAL CORPS.

Maj. F. W. W. Dawson to be Lt.-Col., vice Lt.-Col. R. N. Hunt, to half pay.

Maj. W. L. Hay to be temp. Capt. and relinquishes the rank of Maj.

MILITIA.

Capt. H. C. Sinderson to be Maj. and remains secd.

Capt. G. F. P. Gibbons to be Maj.

TERRITORIAL ARMY.

Capt. H. Forrest to be Maj. (Prov.).

Capt. A. J. Chillingworth (late R.A.M.C.), to be Capt.

Capt. J. Robinson resigns his commn. and retains his rank.

Lieut. P. M. Speed (late Argyll and Sutherland Highlanders) to be Lt.

Colonel E. C. Montgomery-Smith, C.M.G., D.S.O., T.D., has been appointed Honorary Surgeon to His Majesty, in succession to Colonel F. Kelly, C.B.E., T.D. (retired).

Medical News.

UNIVERSITY OF LONDON.—At a recent meeting of the Senate, Prof. E. A. Gardner, the Vice-Chancellor, being in the chair, Dr. E. C. Dodds was appointed to the University Chair of Biochemistry tenable at Middlesex Hospital Medical School. He studied at Middlesex Hospital Medical School. In 1918 he was appointed demonstrator in physiology and in 1919 senior demonstrator in physiology and pharmacology. In 1920 he was appointed assistant in the Bland-Sutton Institute of Pathology, and since 1921 he has been lecturer in biochemistry in the Institute. He obtained the diplomas of M.R.C.S., L.R.C.P. in 1921 and the degrees of M.B., B.S., with distinction in pathology and midwifery, and the B.Sc. degree by research in physiology in 1922 as an internal student, and the external Ph.D. degree in 1925. He has been a recognised teacher since January, 1923. He has published numerous papers in various scientific journals.—The title of Emeritus Professor of Bacteriology in the University was conferred on Prof. Richard T. Hewlett as from August 1st, 1925, on his retirement from the University Chair of Bacteriology in consequence of the closing of the Department of Bacteriology and Public Health at King's College.—The D.Sc. in Physiology was conferred on Mr. B. Babkin and the D.Sc. in Veterinary Pathology on Mr. A. L. Sheather.—Dr. R. A. Young was appointed representative on the occasion of the eleventh annual conference of the National Association for the Prevention of Tuberculosis to be held in London in July, and Sir Holburt J. Waring representative on the occasion of the Second Imperial Social Hygiene Congress to be held at the British Empire Exhibition at Wembley in October.—The semi-general election of medical members of the Senate for 1925–29 resulted in the appointment of the following: By Convocation—Medicine: Dr. E. Graham Little, M.P.; by Royal College of Physicians of London: Sir Wilmot Herringham; by Royal College of Surgeons of England: Mr. J. Sherren; by Faculty of Medicine: Sir Holburt J. Waring.—A course of three lectures on Blood and Circulation from the Standpoint of Physical Chemistry, will be given by Prof. L. J. Henderson (professor of biological chemistry in Harvard University) at University College, London (Gower-street, W.C.) on June 10th, 11th, and 12th, at 5.30 P.M. At the first lecture the chair will be taken by Prof. A. V. Hill.—A course of four lectures on Cardiology will be given by Dr. John Hay (professor of medicine in the University of Liverpool) at University College Hospital Medical School (University-street, Gower-street, W.C.) on June 11th, 12th, 18th, and 19th, at 5 P.M. At the first lecture the chair will be taken by Prof. T. R. Elliott, F.R.S. Admission to the lectures is free, without ticket.

ROYAL SOCIETY OF MEDICINE.—The next social evening commemorating the Charcot centenary will be held on Monday, June 15th, when Fellows and guests will be received by Sir StClair Thomson, the President, at 8.30 P.M. At 9.30 P.M. Dr. Farquhar Buzzard, President of the Section of Neurology, will give an address on Charcot and the Centenary Celebration of his Birth, and many of the works of Charcot and his pupils will be exhibited.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—The annual conversazione of this society will be held in the Kensington Town Hall on June 12th, when Sir Humphry Rolleston, Regius Professor of Medicine at Cambridge, will deliver the Cavendish Lecture. The reception by the President of the society is at 8.30 P.M., and the lecture at 9.

QUEEN CHARLOTTE'S MATERNITY HOSPITAL.—A series of post-graduate lectures will be held on Thursdays during June and July at the hospital, Marylebone-road, N.W. 1., at 5 P.M., as follows: June 11th, Mr. Aleck W. Bourne: Maternal Mortality; 18th, Mr. Trevor B. Davies: Antepartum Hæmorrhage; 25th, Mr. Louis C. Rivett: Mechanical Difficulties in Labour; July 2nd, Mr. Leonard G. Phillips: Intracranial Hæmorrhage; 9th, Mr. Lane Roberts: Clinical Features of Obstructive Labour; 16th, Mr. Leslie Williams: Toxæmia of Pregnancy.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.—The ninety-fifth annual meeting of this Association will be held at Southampton from Wednesday, August 26th, to Wednesday, Sept. 2nd. The President is Prof. Horace Lamb, F.R.S. Among the principal subjects of medical interest to be dealt with in presidential addresses and sectional discussions are the following: The Physiological Basis of Athletic Records; the Acquisition of Muscular Skill; Mental Law of Diminishing Returns; Health in Schools; the Inorganic Elements in Animal Nutrition; Distribution of Animals and Plants in Relation to Continental Movements. The sections will be in session severally or jointly throughout the meeting for the hearing of papers on many other subjects within their various departments.—The Leeds City Council have unanimously invited the Association to hold its meeting in 1927 at Leeds. The Association met in Leeds in 1861 and in 1890. Particulars may be obtained on application to the Secretary, British Association, Burlington House, London, W. 1.

NATIONAL ASSOCIATION FOR THE PREVENTION OF TUBERCULOSIS.—The eleventh annual Conference will be held on Monday and Tuesday, July 6th and 7th, in the Robert Barnes Hall of the Royal Society of Medicine, 1, Wimpole-street, London, W. 1. On Monday at 10.30 A.M. the Conference will be opened by Sir Kingsley Wood, M.P., Parliamentary Secretary to the Ministry of Health. Three of the four sessions will be devoted to discussion of tuberculosis in childhood in which the following will take part: Prof. Pirquet (Vienna), Dr. Stanley Griffith (Cambridge), Dr. Richard Wagner (Vienna), Sir Robert Philip (Edinburgh), Dr. Clive Riviere (London), Prof. A. Louise McIlroy (London), Dr. Fergus Hewat (Edinburgh), Sir Henry Gauvain (Alton), Prof. John Fraser (Edinburgh), and Dr. Gordon Pugh (Metropolitan Asylums Board). The afternoon session on Tuesday will concern itself with the Treatment of Tuberculosis by Sanocrysin, on which Prof. Holger Möllgaard (Denmark), Prof. Knud Faber (Denmark), and Prof. Lyle Cummins (Cardiff) will speak. At the annual meeting of the Association on Monday evening films will be shown, including one recently acquired by the Association, entitled the Invisible Enemy.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—On June 9th at 5.30 P.M. Sir Thomas Horder will give the opening lecture of the June to July series at 1, Wimpole-street, on Some Cases of Fever without Physical Signs.—Three special courses are continuing throughout the months—namely, in Dermatology at the St. John's Hospital; Venereal Diseases at the London Lock Hospital; and Tropical Diseases at the London School of Hygiene and Tropical Medicine.—From June 8th to 27th a special course in Gynæcology will be held at the Chelsea Hospital for Women.—The Victoria Park Hospital will hold a fortnight's course dealing with the various Diseases of the Heart and Lungs from June 8th to 20th.—From June 22nd to July 4th an intensive course has been arranged by the London Temperance Hospital.—In July there will be special courses in the following subjects: Cardiology at the National Heart Hospital; Diseases of Children at the Queen's Hospital; Neurology at the West End Hospital for Nervous Diseases; and Urology at St. Peter's Hospital for Stone. The programme of the Fellowship of Medicine, together with copies of the syllabus for each of the courses, may be obtained from the Secretary at 1, Wimpole-street, London, W. 1.

RONTGEN SOCIETY.—The annual general meeting of this society will be held on Tuesday, June 9th, at 8.15 P.M. in the British Institute of Radiology, 32, Welbeck-street, London, W. 1. A paper on Investigation of the Heart Movement by the Use of the Slit Diaphragm will be read by Dr. Robert Knox.

THE Committee of the Royal National Orthopædic Hospital, 234, Great Portland-street, London, W., has prepared plans for providing an additional 200 beds at the country branch at a cost of not less than £50,000. The present out-patient department is now "hopelessly inadequate," the total attendances last year having greatly exceeded 71,000, and plans have been laid for the extension of this department, the nurses' home, resident medical officers' quarters, and workshops at the cost of another £50,000.

RESEARCH DEFENCE SOCIETY.—The annual general meeting will be held at the house of the Medical Society of London, 11, Chandos-street, W. 1, on Tuesday, June 9th, at 3.30 P.M. The chair will be taken by Lord Lamington, and a short lantern lecture given by Dr. R. A. Lyster on Our Defences Against Small-pox.

INFANT MORTALITY IN DUBLIN.—Speaking last week at the annual meeting in aid of St. Ultan's Hospital for Infants, Dr. M. Russell, medical officer of health for Dublin, remarked that a great deal had been said about Dublin's dirty milk and the havoc it played with child life. The truth was that milk—dirty or clean—entered very little into the question at all, because most of the time the infants never got milk of any kind. Infant mortality was high in Dublin because housing conditions were such as compelled families of eight or ten persons to live in one room. According to the medical report of the hospital the percentage of illegitimate babies admitted increased from 15 per cent. in 1923–24 to 19 per cent. in the present year, and the death-rate among illegitimates increased from 48 to 54 per cent. This very high death-rate among illegitimate babies had this year raised the total death-rate in the hospital to 44 per cent., as compared with 39 per cent. in 1923–24.

DONATIONS AND BEQUESTS.—The Harrogate Town Council have made a gift of £5000 for the purchase of a site in Knaresboro'-road for a new infirmary.—Mr. John Smith, Dewsbury, bequeathed £1000 to the Dewsbury and District Infirmary.—The late Mr. William Lyall Stewart, of Edinburgh, left the residue of his property (about £30,000), subject to certain life interests, for distribution for charitable purposes in Scotland.—Mr. Alfred Dickinson, of Cedar Lodge, Sunderland, left by will £2000 for distribution among the Sunderland Royal Infirmary, the Monkwearmouth and Southwick Hospital, the Durham County and Sunderland Eye Infirmary, the Sunderland Orphan Asylum, and the Sunderland Children's Hospital.—By the will of the late Sir George Donaldson, of Grand-avenue, Hove, Sussex, the London Hospital and the Sussex County Hospital will receive £1000 each.—Among other bequests the late Mrs. Annie Eliza Clegg McCay, of Troy Hall, Londonderry, left by will £1500 to the Londonderry Eye and Ear Hospital and £1000 to the Montrose Infirmary, Scotland. The residue of the property will be divided between the Montrose Infirmary, St. Dunstan's Hostel for the Blind, and the Londonderry City and County Infirmary.—Mr. William Sillito, of Eccleshall, near Stafford, who was once a patient in the Staffordshire General Infirmary, bequeathed to this institution a legacy of over £5000.—The London Hospital has received a cheque for £60 from a man who 12 years ago was operated on in the hospital for an internal complaint. In gratitude for his recovery each year he has given a percentage of his income to help the hospital funds. The total amount contributed by him is over £500.—The Belgrave Hospital for Children has received an offer of £10,000 to assist in defraying the cost of building a new west wing on a condition that the committee of the hospital shall themselves collect another £10,000.—Mrs. Adelina Ellerton Creagh-Osborne, of Ditton Park, Slough, left £1000 to King Edward VII. Hospital, Windsor.—Blackburn Royal Infirmary has received a cheque for £500 from Mrs. Nutall, an ex-mayoress, as a thanksgiving for her restoration to health, and in recognition of the sympathy and kindness shown during her illness. Mr. W. Kay, cotton merchant, and his wife, Mrs. Kay, sent a sum of £500 in commemoration of their golden wedding, and their late son. A third gift of £100 was from an anonymous donor.—Sir Gilbert Wheaton Fox, Bart., sugar merchant, Sefton Park, Liverpool, left £1000 each to the Liverpool Royal Infirmary, the Royal Southern Hospital, Liverpool; the David Lewis Northern Hospital; the Stanley Hospital, Bootle; the Liverpool Seamen's Orphanage and the Liverpool Prison Gate Mission; £500 to the Birkenhead Borough Hospital, and £2000 each to the Liverpool Bluecoat School and the training ship *Indefatigable.*

Medical Diary.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MEETINGS OF SECTIONS.

Friday, June 12th.

OPHTHALMOLOGY: at 8.30 P.M. (Cases at 8 P.M.)
Papers:
Mr. G. H. Pooley: The Operative Treatment of Acute and Chronic Dacryocystitis.
Dr. G. Montagu Harston: The Safety Limits of the Jullundur Operation for the Intracapsular Extraction of Cataract.
To be followed by the
Annual General Meeting:
Election of Officers and Council.

BIOCHEMICAL SOCIETY.
MONDAY, June 8th.—5 P.M. (at St. Thomas's Hospital, S.E.). *Communications:*—J. Patterson: The Carbohydrate Content of Normal Urine. H. P. Marks: Some Observations on the Testing of Insulin. R. H. A. Plimmer and J. L. Rosedale: Study of Van Slyke's Method of Analysis of Proteins. R. H. A. Plimmer and J. L. Rosedale: Experiments on Nutrition. R. H. A. Plimmer: The Action of Nitrous Acid upon Amides and some Amino Compounds. W. J. N. Burch: Some Esters of Phosphoric Acid.

MANCHESTER MEDICAL SOCIETY.
WEDNESDAY, June 10th.—4.30 P.M. (at the Manchester Royal Infirmary), Clinical Meeting.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS.
TUESDAY, June 9th.—5 P.M., Dr. S. A. K. Wilson: Disorders of Motility and of Muscle Tone with special reference to the Corpus Striatum. (First Croonian Lecture.)
THURSDAY.—5 P.M., Dr. Wilson: (Second Croonian Lecture.)

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street W.
MONDAY, June 8th, to SATURDAY, June 13th.—WEST LECTURE HALL, Royal Society of Medicine, Wimpole-street, W. Lecture arranged by the Fellowship of Medicine and open to all members of the Medical Profession. At 5.30 P.M., Tuesday, June 9th, Sir Thomas Horder on Some Cases of Fever without Physical Signs.—CHELSEA HOSPITAL FOR WOMEN, Arthur-street, S.W. Post-Graduate Course in Gynæcology, lectures and demonstrations daily. Operations, pathological demonstrations. First week.—LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE, Endsleigh Gardens. Tuesday and Thursday, at 2 P.M., lecture-demonstration by Dr. P. Manson-Bahr and Dr. G. C. Low.—ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, daily demonstrations in the O.P. Department. Bi-weekly lectures by Dr. Sibley and Dr. Whitfield.—CITY OF LONDON HOSPITAL FOR DISEASES OF THE HEART AND LUNGS, Victoria Park, E. Post-Graduate Course in Chest Diseases. Lectures, clinical demonstrations, and laboratory demonstration.—LONDON LOCK HOSPITAL, Dean-street, W. Comprehensive Course. Daily out-patient instruction, and lectures dealing with the diagnosis and treatment of venereal diseases. Second week.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith, W.
MONDAY, June 8th.—11 A.M., Surgical Registrar: Surgical Wards. 12 noon, Mr. Simmonds: Applied Anatomy. 2 P.M., Dr. Scott Pinchin: Medical Out-patients.
TUESDAY.—11 A.M., Mr. Endean: Venereal Diseases. 12 noon, Dr. Burrell: Chest Cases. 3 P.M., Dr. Pritchard: Medical Wards.
WEDNESDAY.—11 A.M., Medical Registrar: Medical Wards. 2 P.M., Dr. Burnford: Medical Wards. 2.30 P.M., Mr. Donald Armour: Surgical Wards.
THURSDAY.—10 A.M., Dr. Grainger Stewart: Neurological Dept. 11 A.M., Sir Henry Simson: Gynæcological Wards. 2 P.M., Mr. Bishop Harman: Eye Dept.
FRIDAY.—10 A.M., Dr. Dowling: Skin Dept. 2 P.M., Mr. Sinclair: Surgical out-patients. 2 P.M., Mr. Vlasto: Throat, Nose, and Ear Dept.
SATURDAY.—10 A.M., Dr. Saunders: Medical Diseases of Children. 10 A.M., Mr. Banks-Davis: Operations on Throat, Nose, and Ear.
Daily, 10 A.M. to 6 P.M., Saturdays, 10 A.M. to 1 P.M., In-patients, Out-patients, Operations, Special Departments.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.
TUESDAY, June 9th.—4.30 P.M., Dr. J. K. C. Laing: Demonstration of Cases of Mental Disease (at the Mental Hospital, New Southgate, N.).
FRIDAY.—4.30 P.M., Mr. A. E. Giles: Treatment by Radiation in Gynæcology.
Daily.—Clinics in General and Special Departments, Demonstrations, Operations, &c.

QUEEN CHARLOTTE'S MATERNITY HOSPITAL, Marylebone-road, N.W. POST-GRADUATE LECTURES.
THURSDAY, June 11th.—5 P.M., Mr. Aleck W. Bourne: Maternal Mortality.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C. 1.

POST-GRADUATE COURSE: MAY–JUNE, 1925.

CLINICAL LECTURES AND DEMONSTRATIONS.

MONDAY, June 8th.—2 P.M., Out-patient Clinic: Dr. Hinds Howell. 3.30 P.M., Ocular Palsies: Mr. Williamson Noble.

TUESDAY, June 9th.—2 P.M., Out-patient Clinic: Mr. Walshe. 3.30 P.M., Fractures of the Skull: Dr. Donald Armour.

THURSDAY, June 11th.—2 P.M., Out-patient Clinic: Dr. Kinnier Wilson. 3.30 P.M., The Effects of Increased Intracranial Pressure: Dr. Riddoch.

FRIDAY, June 12th.—2 P.M., Out-patient Clinic: Dr. Gordon Holmes. 3.30 P.M., Progressive Muscular Atrophy: Dr. James Collier.

COURSE OF LECTURES AND DEMONSTRATIONS ON THE PATHOLOGY OF THE NERVOUS SYSTEM.

MONDAY, June 8th.—12 noon, The Neuron: Dr. J. G. Greenfield.

A Course of Clinical Demonstrations will be given by Dr. H. J. Macbride, chiefly on METHODS OF EXAMINATION OF THE NERVOUS SYSTEM, in the Wards at 10 A.M. on Tuesdays and Fridays. The fee for this Course is £2 2s.

Mr. Armour and Mr. Sargent operate at the Hospital on Tuesday and Friday mornings at 9 A.M., or at such other times as may be announced.

Any part of the Course may be taken separately. Special arrangements will be made for those unable to take the whole Course.

Fees should be paid to the Secretary of the Hospital at the Office on entering for the Course.

J. G. GREENFIELD, Dean of Medical School.

ST. MARY'S HOSPITAL INSTITUTE OF PATHOLOGY AND RESEARCH.

THURSDAY, June 11th.—5 P.M., Prof. J. Joly: Radiology.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.

THURSDAY, June 11th.—4 P.M., Mr. T. Higgins: Appendicitis in Childhood.

THE LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, Leicester-square, W.C.

TUESDAY, June 9th.—5 P.M., Dr. Sibley: Alopecia.

THURSDAY.—5 P.M., Dr. Whitfield: Eczema.

Appointments.

DOTTRIDGE, C. A., M.D. Camb., D.P.H., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Lyndhurst District of the County of Southampton.

FELDMAN, W., M.D. Lond., M.R.C.P. Lond., Medical Superintendent St. Pancras Hospital.

HEWER, C. LANGTON, M.B., B.S. Lond., Anæsthetist to the Hospital for Tropical Diseases, Endsleigh-gardens, N.W.

LAPAGE, C. P., M.D. Manch., F.R.C.P. Lond., Consulting Physician, Royal Albert Institution for the Feeble-Minded, Lancaster.

LEONARD, T. M. R., Lieut.-Colonel, D.S.O., Assistant Director of Medical Service in Nigeria.

MCCARTNEY, J. ELVINS, M.D., Ch.B. Edin., Director of Pathological Services to the Metropolitan Asylums Board.

STALLMAN, J. F. H., M.B., B.S. Lond., F.R.C.S. Eng., Honorary Assistant Surgeon, Gloucestershire Royal Infirmary and Eye Institution.

St. Thomas's Hospital: ARCHER, E. C., M.R.C.S., L.R.C.P. Lond., SIMS, T. H., M.B., B.Ch. Camb., REA, R. H. T., M.B., B.Ch. Camb., ALEXANDER, R. D., M.B., B.Ch. Camb., MARKS, D. P., M.R.C.S., L.R.C.P. Lond., BOGGON, R. H., M.R.C.S., L.R.C.P. Lond., ROBINSON, A. B., M.R.C.S., L.R.C.P. Lond., and BATTSON, A. A., M.B., B.S. Lond., Casualty Officers and Resident Anæsthetists; COOKE, A. M., M.B., B.Ch. Oxf., TURNEY, H. F., M.B., B.Ch. Oxf., WALKER, E. G. L., M.R.C.S., L.R.C.P. Lond., and MCLEAN, W. W., M.R.C.S., L.R.C.P. Lond., Resident House Physicians; HOPE-SIMPSON, J. W., M.B., B.Ch. Camb., Resident House Physician for Children; THWAITES, W. G., M.R.C.S., L.R.C.P. Lond., GERVIS, W. H., M.B., B.Ch. Camb., HUDSON, M. W. P., M.R.C.S., L.R.C.P. Lond., and STARKEY, R. S., M.R.C.S., L.R.C.P. Lond., Resident House Surgeons; JEFFERY, A. L. P., M.B., B.S. Lond., Resident Orthopædic House Surgeon; ALLAN, F. G., M.R.C.S., L.R.C.P. Lond., and BARRON, R. McG., M.R.C.S., L.R.C.P. Lond., Resident House Surgeons; REES, E. J., M.R.C.S., L.R.C.P. Lond., Senior Obstetric House Physician; WEBB-PEPLOE, M. H., M.B., B.Ch. Camb., Junior Obstetric House Physician; HEATH, W. E., M.R.C.S., L.R.C.P. Lond., Senior Ophthalmic House Surgeon; GORDON, G. D., M.R.C.S., L.R.C.P. Lond., Junior Ophthalmic House Surgeon; NEILSON, D. F. A., F.R.C.S. Eng., CAVENAGH, J. B., M.B., B.Ch. Oxf., COOPER, G. K., M.B., B.Ch. Camb., COOK, L. C., M.R.C.S., L.R.C.P. Lond., DOBIE, J. M., M.R.C.S., L.R.C.P. Lond., KIES, J. P., M.R.C.S., L.R.C.P. Lond., BARRON, H. T., M.D. Lond., MARCANO, G. R., M.R.C.S., L.R.C.P. Lond., TRIM, E. A., M.R.C.S., L.R.C.P. Lond., MARRINER, H. I., F.R.C.S. Edin., ROBINSON, J. J. R., M.R.C.S., L.R.C.P. Lond., AMESUR, C. A., M.R.C.S., L.R.C.P. Lond., GIBBENS, J. H., M.R.C.S., L.R.C.P. Lond., LLOYD-WILLIAMS, P., M.R.C.S., L.R.C.P. Lond., L.D.S., LANCASTER, A. L., M.R.C.S., L.R.C.P. Lond., NICHOLSON, H. W., M.R.C.S., L.R.C.P. Lond., THOMPSON, E., M.R.C.S., L.R.C.P. Lond., ASSERMAN, D., M.R.C.S., L.R.C.P. Lond., DE JERSEY, G. W. S., M.R.C.S., L.R.C.P. Lond., MARSDEN J. P., M.R.C.S., L.R.C.P. Lond., BROCKMAN, E. P., M.B., M.Ch. Camb., F.R.C.S. Eng., REES, D. I., M.R.C.S., L.R.C.P. Lond., WIENER, R. A. K., M.R.C.S., L.R.C.P. Lond., TOMPSON, B. E., M.B., B.Ch. Oxf., SHIRES, B., M.B., Ch.B. Edin., CHIESMAN, W. E., M.R.C.S., L.R.C.P. Lond., RICKMAN, J., M.B., B.Ch. Camb., HODDER, R. G., M.R.C.S., L.R.C.P. Lond., HAWARD, F. C., M.R.C.S., L.R.C.P. Lond., CRAWFORD, D. P., M.R.C.S., L.R.C.P. Lond., RILEY, D., M.R.C.S., L.R.C.P. Lond., and GUYMER, R. F., M.R.C.S., L.R.C.P. Lond., Chief Assistants and Clinical Assistants.

Vacancies.

For further information refer to the advertisement columns.

Aberdeen County.—Asst. M.O.H. £600.

Ashton-under-Lyne District Infirmary.—H.S. at rate of £150.

Barrow-in-Furness, North Lonsdale Hospital.—H.S. £175.

Birmingham, Queen's Hospital.—House Governor and Sec.

Bradford Children's Hospital.—H.S. £100.

Bristol General Hospital.—Hon. Clin. Assts.

Bristol, Southmead Hospital.—Second Asst. M.O. £200.

Cambridge, Addenbrooke's Hospital.—H.S. at rate of £130.

Cancer Hospital, Fulham-road, S.W.—H.S. at rate of £100.

Chiswick General Hospital.—Hon. S.

City of London Maternity Hospital, City-road, E.C.—Res. M.O. at rate of £100.

Dreadnought Hospital, Greenwich.—H.P. and H.S. Each at rate of £110.

Dundee Royal Infirmary.—Hon. Asst. Obstetrician and Gynæcologist.

Edinburgh, Royal Hospital, Morningside.—Asst. P. £350.

General Lying-in Hospital, York-road, Lambeth, S.E.—Res. M.O. at rate of £100.

Hampstead General and North-West London Hospital, Haverstock-hill, N.W.—H.P., H.S., Cas. M.O., and Cas. Surg. O. All at rate of £100.

Hastings, Royal East Sussex Hospital.—Hon. Ophth. Surg.

Hospital for Sick Children, Great Ormond-street, W.C.—H.S. Also H.P. Each at rate of £50.

Lanchester Rural District Council, &c.—M.O.H. £800.

London Hospital.—Head of Children's Dept.

London Lock Hospital, 91, Dean-street, W.—Clin. Asstships.

Manchester, St. Mary's Hospitals.—Two H.S.'s. Each at rate of £50.

Manchester University and Royal Infirmary.—Director of Lab. of Clin. Investigations. £600.

Middlesex Hospital and Medical School, W.—Medical Registrarship. £300.

Northampton General Hospital.—Hon. S.

Oldham Royal Infirmary.—Three H.S.'s. Each at rate of £200.

Queen's Hospital for Children, Hackney-road, Bethnal Green, E.—Asst. S.

Queen Mary's Hospital for the East End, Stratford, E.—H.P.'s and H.S.'s, &c.

Reading, Royal Berkshire Hospital.—One H.P. and two H.S.'s. Each at rate of £150.

St. Bartholomew's Hospital Medical College.—Lecturer on Pharmacology and Therapeutics.

St. Peter's Hospital for Stone, &c., Henrietta-street, Covent Garden, W.C.—Clin. Assts.

Salford Royal Hospital.—H.S. to Gynæcological, &c., Depts., and H.P. Each at rate of £125.

Sheffield, Jessop Hospital for Women.—Asst. H.S. at rate of £100.

Sheffield Royal Hospital.—Res. Surg. O. £200.

West Bromwich, Union Infirmary, Hallam-street.—Visiting S.'s. £150. Visiting P., £200. Aural S., £75. Dental S., £50. Operative Obstetrician, £10 10s. per case.

West London Hospital, Hammersmith-road, W.—H.P., H.S., Aural H.S., and Res. Cas. O. Each at rate of £100.

Wolverhampton and Midland Counties Eye Infirmary.—H.S. £200.

Wrexham Infirmary.—H.S. at rate of £150.

Births, Marriages, and Deaths.

BIRTHS.

AYLEN.—On May 29th, at Halesworth, Suffolk, the wife of John Aylen, M.R.C.S., L.R.C.P., of a son.

COOMBS.—On May 26th, at Bedford, the wife of Martin Coombs, M.B., of a son.

FURNESS.—On May 25th, at Latham House, Melton Mowbray, the wife of Harold S. Furness, M.D., of a daughter.

JOBSON.—On May 26th, at Crofton-road, Ealing, the wife of J. Stanley Jobson, M.B., F.R.C.S., of Knightsbridge, S.W., of a son.

MARRIAGES.

SCOTT—GODFREY.—On May 28th, at Bexley Parish Church, Kent, Joseph Wilkie Scott, *M.C.*, M.D., M.R.C.P. Lond., of Regent-street, Nottingham, to Marjory Annie Godfrey, M.R.C.S., L.R.C.P., third daughter of W. S. Godfrey, Esq., of Red House, Bexley Heath, Kent.

DEATHS.

MCCARTHY.—On May 24th, at Cliftonville, Margate, Justin McCallum McCarthy, M.D., M.R.C.S. (late of The Grove, St. George's, Shropshire), in his 73rd year.

SCOTT.—On May 29th, at a London nursing home, Dr. James Scott, of 11, Templeton-place, Earl's Court.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Comments, and Abstracts.

THE SUN, THE WIND, AND THE SKIN

IN THE TREATMENT OF DEEP-SEATED TUBERCULOSIS.*

BY G. R. GIRDLESTONE, F.R.C.S. ENG.

THE SUN.

THE sun offers light and heat. Their actions differ profoundly. Can we learn how and when to use each?

(*a*) *Light.*—Ultra-violet light is intensely irritating, but it is stopped by the epidermis. In small doses it stimulates, in large doses destroys, cells near the surface. The sun's rays, as their wave-length increases from violet towards red, gradually lose photochemical activity but gain penetration and heating power. Those that travel beyond the skin have little or no bactericidal action.

(*b*) *Heat.*—The skin is heated throughout its depth, the arterioles in the corium dilate, its circulation and metabolism become active. But if the heat of the summer sun is unchecked by cool and moving air, the skin and the whole body quickly get too hot. General loss of tone results, and any further roasting leads to danger.

Dangers—Light: Overdose of superficial action, sunburn; of deep action, sun fever. Heat: Overdose to the head, sunstroke; applied widely, heat stroke.

Thus we learn that free use of the sun's light without protection, or of its heat without cooling, is harmful. Fortunately a good skin provides protective pigment, and days without wind are rare.

In *superficial tuberculous lesions*, violet and ultra-violet light attack the bacilli directly.

In *rickets*, the deep action of light is sought, only small doses are needed, and the effect is excellent in unpigmented and non-pigmenting children and animals. In this condition photochemical action counteracts for the time being a deficiency in light or in diet.

Is it not possible that in deep-seated tuberculosis, as in rickets, light and cod-liver oil are only of value in cases where there has been a deficiency in light or in diet?

Where the body's normal need for light is satisfied, has its further exposure to the photochemical action of light any value in the treatment of deep-seated tuberculosis? I am inclined to doubt it for the following reasons: (1) Unless or until the skin is pigmented the optimum dose of light is small, and limited by the dangers of overdose of its superficial or its deep action. (2) Exposure to sunlight can only be advantageously increased pari passu with pigmentation. This experience suggests that the "deep" dose of light cannot be advantageously increased. (3) The sun offers light and heat, a good skin stops the light as near the surface as possible. The better the skin, and the more tropical the race, the deeper the pigmentation, and the more complete the barrier to light. (4) The best results in the treatment of deep-seated tuberculosis are obtained in well pigmented patients. They can be much longer exposed to sun and wind than those poorly pigmented, but little or no greater dose of light passes the barrier. Apparently the main value lies among the other factors of sun and wind.

If it is true that photochemical activity plays a comparatively unimportant part in the treatment of deep-seated tuberculosis by exposure of the body to the sun and the wind it is entirely wrong and very misleading to estimate the value, and calculate the dosage, of any sample of sunlight by its content of violet and ultra-violet light. The treatment of rickets and of superficial tuberculous lesions by light is a different matter; if ultra-violet light is definitely wanted, and particularly prescribed, it is an advantage to be able to dispense it accurately.

THE WIND.

The wind cools the skin by convection and stimulates it by its impact. The combination is pleasant, and, like a contrast bath, promotes active hyperæmia of the skin. The cooling induces an increased production of heat in the body. The wind also affects metabolism, rousing by its ever varying touch the sense organs of the skin, which, in their turn, are in sympathy with the deep viscera.

THE SKIN.

The skin has fallen into neglect. It is not merely an excretory organ or something which we can blister or paint with iodine. Clearly the skin is our first line of defence against invasion of the body; its efficiency in resisting bacteria is so complete that it is often forgotten. But quite apart from the cuticle, which it has developed as a physical defence, there is evidence that the skin plays an important part in our reaction to the tubercle bacillus. Both its sensibility and metabolism appear to share in this action. Most of us feel strongly that good pigmentation carries with it a better prospect of recovery, though it is a popular and dangerous fallacy to suppose that pigmentation is a sign of healing and its depth a measure of cure. Pigmentation is the response of a good skin to photochemical light; a skin capable of cutting out the violet end of the spectrum, capable also of gaining the greatest benefit from other effects of sun and wind.

THE AIR BATH.

On cloudy days it is just an air bath, on windy days a wind bath, when the sun shines it is a sun bath. The best results are obtained with the long exposures which a warm sun, a cool wind, and a well-pigmented skin allow. The maximum exposure is desirable, but its length is limited by the danger of too much light or heat or cold. In England, from October to March there is little or no danger of an overdose of light, but in the spring and summer very great care is necessary. Rollier's table, prepared to suit the Leysin sunlight, is needlessly and disappointingly slow for our mild and fickle sun. Everyone must work out a method to suit the strength of his sunlight, which varies with the latitude and the clarity of the air. Allowance must be made for different types of skin: for poor skins the dose must be reduced, while good skins will benefit by longer exposures. I entirely agree with Rollier that several short exposures are better than one long one; especially when too much heat or cold is feared. In the winter I give three or four air baths a day. In very cold weather they are each just a few seconds' exposure of the body to a douche of keen wind, never long enough to cause lasting chill. A cold bath of wind or water gives the greatest benefit when it is followed by an after-glow of the skin. I am looking for the best method of making sure of this after-glow.

I have great faith in the value of air baths all through the year. An artificial light department is not essential, perhaps not very helpful, to an orthopædic hospital.[1] For cases of rickets do splendidly with air baths and suitable diets. And I think it probable that the ordinary (mixed) English weather, applied to the skin in well-regulated doses, will be found as effective in the treatment of tuberculosis of bones and joints as other climates, and far more helpful than any indoor artificial sun.

Oxford.

* Opening a discussion at the meeting of the British Orthopædic Association at Oxford, on April 17th.

THE GUARDIANSHIP SOCIETY.

THE valuable work of the Guardianship Society, which has its headquarters at Brighton, was again emphasised at the annual meeting at Brighton on May 21st. The Society has for its object the care of mental defectives and the physically infirm requiring guardianship by means of home life in contra-distinction to institution life. There is no restriction in regard to age, sex, religion, or even nature of infirmity. For 12 years it has carried on its work which has increased and developed year by year. The cases now on the books number 419. Of this total, 165 patients are boarded out under the Board of Control, and 178 are boarded out under the inspection of the Society. The others are all under observation. Many patients are visited in their own homes, and for these an occupation centre has been started, and the Society has just boarded out its first case from a mental hospital. In addition, an after-care committee is being formed for those patients discharged from mental hospitals. A few years ago the Society purchased a cottage farm in Sussex capable of the reception of seven patients. This has practically exceeded all expectations in regard to its helpfulness to the patients, and the Society is hoping to establish another similar home elsewhere when the opportunity presents itself. A new centre has been opened in Essex; and following the urging of the Board of Control that local authorities should make an effort to organise schemes of guardianship on similar lines, several local authorities are getting into touch with the Society.

At the conclusion of the business meeting an address on Public Opinion and the Mental Underling was given by Dr. H. Crichton-Miller, of the Tavistock Clinic. He dealt with his subject under the headings of prevention, education, and environment, which he described as three aspects of the great problem. With regard to the environmental aspect, Dr. Crichton-Miller stated that hitherto the mental underling had been allowed to take his chance; he had been exposed to society and society had been exposed to him; yet slowly but surely public opinion was facing the fact that this was an extremely costly proceeding, and that punishment could not improve those who could not understand. Society,

[1] Lupus presents a different problem, requiring an expensive light equipment and a specially trained staff to work it. The treatment of lupus, with its demand for experience and minute accuracy, would be far better done if the cases were concentrated. Half a dozen hospital centres for lupus (possibly attached to orthopædic hospitals as at Alton) would serve England and Wales.

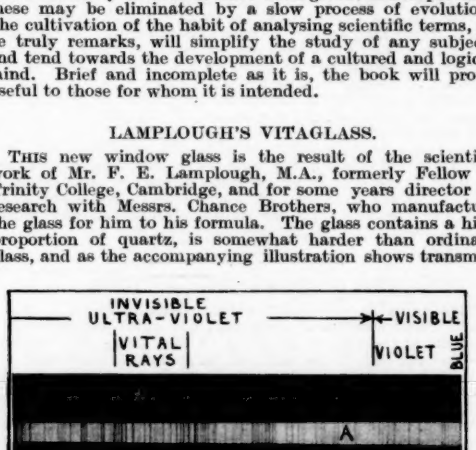
therefore, he considered, was waking up to the necessity of providing special environments for those who could not be expected to adjust to a normal environment. The official solution was State-controlled institutions; some of these in America accommodated 3000. But in his view the ideal solution was that which the Guardianship Society provided—a personally-selected environment among normal people for the ineducable underling. Thus the patient was allowed to feel that he was still a part of and in touch with normal society.

AID TO MEDICAL TERMINOLOGY.

IN writing a book on "Gynecology for Nurses," Dr. M. J. Seifert, of Chicago, added an appendix dealing with the roots of medical words, in order to facilitate the reading of his book. This appendix has now been republished separately, entitled "Synthesis of Medical Terminology" (London: D. Appleton and Co., pp. 30, 3*s*. 6*d*.), in the hope that it may also prove useful to students of medicine and dentistry. All the more commonly used suffixes, roots, and prefixes that are met with in medicine are given in alphabetical order, with their meaning, and examples of the way in which words are built up from them. The author enjoins the avoidance of hybrids, although, since he does not himself distinguish between Greek and Latin roots, he affords the reader no protection from coining them. He regrets the few well-established terms in medicine to which arbitrary definitions have been given, and hopes that these may be eliminated by a slow process of evolution. The cultivation of the habit of analysing scientific terms, as he truly remarks, will simplify the study of any subject, and tend towards the development of a cultured and logical mind. Brief and incomplete as it is, the book will prove useful to those for whom it is intended.

LAMPLOUGH'S VITAGLASS.

THIS new window glass is the result of the scientific work of Mr. F. E. Lamplough, M.A., formerly Fellow of Trinity College, Cambridge, and for some years director of research with Messrs. Chance Brothers, who manufacture the glass for him to his formula. The glass contains a high proportion of quartz, is somewhat harder than ordinary glass, and as the accompanying illustration shows transmits



Spectrum photograph, showing the composition of light from an electric arc between iron poles, taken by the Hilger quartz spectrograph. A, without screen. B, passed through vitaglass 2 mm. thick. C, passed through ordinary glass 2 mm. thick.

freely the waves of short length beyond the visible violet end of the spectrum. Three forms of the glass are supplied. The standard form with "cathedral" surface gives slight diffusion and indistinctness of vision suitable for glazing in schools, offices, sun-lounges in hotels and houses, children's nurseries, invalids' rooms, verandah roofs and windscreens, sanatoria, hospitals, houses for animals and birds, particularly for chickens and laying poultry. A form is available at slightly higher cost with special diffusing surface for privacy. Where clear vision is specially desired, as in the lower sashes in houses, the glass is available at higher price as clear window glass. The ordinary form of the glass can be obtained at 4*s*. a square foot for small quantities from Mr. F. E. Lamplough, 47, Bunbury-road, King's Norton, Birmingham. A discount of 30 to 45 per cent. is allowed for hospitals and institutions, according to the quantity required and economy of cutting the necessary panes. The clear window glass costs 5*s*. 6*d*. per foot, subject to reduction for quantities.

THE PUBLIC SCHOOLS YEAR BOOK.

THE Year Book for 1925, edited by C. H. Deane, *M.C.*, B.A., A. P. W. Deane, B.A., and W. A. Bulkeley Evans, O.B.E., M.A. (London: H. F. W. Deane and Sons, the Year Book Press Ltd., 31, Museum-street. Pp. 894. 10*s*. 6*d*.), is the official book of reference of the Headmasters' Conference and is in its thirty-sixth year of publication. For all who have charge of boys at school age it will be found a valuable compendium of information with regard to public and preparatory schools and universities, giving the names of governing bodies and staffs, the means of admission, particulars of fees and scholarships, and so forth. In addition, there are articles on the professions, the public services, and business careers which may follow school or college life, a new section having been added this year dealing with surveying, land agency, and auctioneering. The medical and dental professions are dealt with fairly but briefly, and veterinary medicine finds a place. Interesting supplements are a public schools bibliography divided into general and comprehensive works and works dealing with particular schools, a list of public schools periodicals and old boys clubs, and a list of school colours. It is a valuable work of reference.

WIRELESS FOR HOSPITAL PATIENTS.

THERE is a general belief in America, so we are informed on the good authority of the *Journal of the A.M.A.*, that the brain of the sick man or the convalescent woman functions only during periods of health. In hospital his or her mental pabulum is the inane detective story, the period sex-thriller, the novel rewritten from a movie plot, the collection of short stories, culled from cheap magazines, supplemented by the tattered and coverless issues of current magazines "prepared for the Babbittry." The position may not be as bad as that in this country, but it is safe to say that ennui is not unknown in surgical wards. The *Daily News* is appealing to its readers for funds to fix a wireless point or plug at the bedside of each hospital patient in London, and has set up a small committee to administer the fund subscribed, the members of which are Lord Knutsford, Sir Arthur Stanley, Lieut.-Commander J. M. Kenworthy, M.P., Prof. W. H. Eccles, F.R.S., President of the Radio Society of Great Britain, and Mr. J. Hugh Jones, Managing Editor of the *Daily News*. Capt. P. P. Eckersley, of the British Broadcasting Company, has agreed to advise in matters of equipment. The cost is estimated at about £1 a point, and the total outlay for 25,000 to 30,000 beds at £50,000 or more. The *Daily News* has set the lead by offering itself to equip the Royal London Ophthalmic Hospital in every detail, and the offer has been accepted by the secretary of the hospital, who writes that "to patients who are deprived of their sight (the majority, happily only temporarily) it is scarcely necessary to stress the inestimable boon and the enjoyment which will be given during the time they are undergoing treatment."

The same movement is going on in France, where Dr. Dujardin published in a recent issue of the *Echo Médical du Nord* a poem entitled "Musicothérapie," of which the two concluding stanzas run as follows:—

> Grâce au sans-fil, bientôt, de ses flots d'harmonie
> Orphée apaisera les affres, l'agonie
> Des malheureux couchés aux lits de l'hôpital
> Par l'écho d'un concert d'un brillant récital!. . .
>
> Mais épargne à leurs nerfs, confrère,—à leur cervelle,
> La musique de fous de l'Ecole nouvelle;
> D'un orchestre en fureur l'horrible tintamarre
> Pourrait les envoyer, avant l'heure. . . à Clamart!!

We are indebted to Prof. D. T. Barry for the following metrical translation:—

> And soon, thanks to wireless, Orpheus will appease
> With harmonies sweet poor souls ill at ease,
> Their anguish relieving in hospital ward,
> As echoes of concerts swift pain can retard.
>
> Consider their nerves, dear colleague, and rule
> Out the music of fools of the modern school:
> The furious jazz of some horrible band
> May send them too soon to the distant land.

HARROGATE.

THE new handbook for 1925–26 sets out the amenities of the Yorkshire spa. An outline sketch is given of the cure itself and of the sports, pastimes, and amusements, educational and other facilities offered at the resort, along with a guide to excursions on foot or otherwise, and a list of hotels and boarding-houses. The brochure on the waters and treatments of Harrogate, giving full details of the cure, may be obtained on application to the General Manager, Baths and Wells Department, Harrogate.

M. H. G.—Intra-mammary insufflation in cows consists of the introduction of air into the udder by means of a suitable syringe, the nozzle of which is inserted into the teats. These may be then closed with clips to prevent the air escaping.